

This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

Sci 1621.48

Harvard College Library



FROM THE

BRIGHT LEGACY

One half the income from this Legacy, which was received in 1880 under the will of

JONATHAN BROWN BRIGHT

of Waltham, Massachusetts, is to be expended for books for the College Library. The other half of the income is devoted to scholarships in Harvard University for the benefit of descendants of

HENRY BRIGHT, JR.,

who died at Watertown, Massachusetts, in 1686. In the absence of such descendants, other persons are eligible to the scholarships. The will requires that this announcement shall be made in every book added to the Library under its provisions.

THE

AMERICAN

COTTON PLANTER,

A MONTHLY JOURNAL, DEVOTED TO

IMPROVED PLANTATION ECONOMY, MANUFACTURES, AND THE MECHANIC ARTS.

Edited by N. B. CLOUD, M. D., LaPlace, Ala.

NIL DESPERANDUM.—
POSSUNT QUIA POSSE VIDENTUR.

VOL. I. 1853.

MONTGOMERY, ALA.—1853.

Sci 1621.48

HARVARD COLLEGE
NOV 20 1923
LIBRARY

Brightwood
(I-IV)

.32-38
1

INDEX TO VOL. 1,

A.

Alabama Agricultural Association, Constitution of, 30
American Women and Rural Life, 137
" Press—Geological Cabinet, 264
" Cotton Planter, 20
" Agriculture, what it is, &c., 175
Agricultural Convention, 80, 177
" Association, 114, 242, 274, 305, 337, 339
" " Proceedings of, &c., 188
" Education, 102
" Education, Premium Essay on, 164, 193
" and Horticultural Society, Mobile, 82
" Societies, County, 19
" Society Southern C., Premium List of, 257
" Society, Montgomery County, 286
" " Robinson Springs, Premium List of, 223
" Fair, Robinson Springs, 307
Agriculture in North Carolina, 381
Alkaline Washes for Trees, 112
Analyses, Cotton Plant and Seed, 33, 70
" Soils and Pulverization, 48
" Soils, 338
Apple Tree Catterpillars, 298
Architecture, 28
Army Birds, 230
Arrow Root, its Culture, &c., 55

B.

Bark of Trees, slitting, 335
Basket Willow, 301
Black Oats, 63
Bees, Hiving of, 178
Beautiful in Ground, 297
Budges, Tubular, 334
Boll Worm, propositions for counteracting, &c. 340
Book Farming, 380
Burns, Remedy for. 111, 336

C.

Cement, valuable, 24
Cholera, Remedy for, 219
Circular of the Committee of Ag'l Congress, 125
" Executive Council Ag'l Assoc'n, 275
Chemistry, Agriculture, statement by Liebig, 122
Clover in the South, 110
Cocoa Cakes, 111
Coffee, 189
Cold Cream for Sore Lips, 111
Copper of the U. S., for 1852, 172
Corn Bread, 111
" Experiments, 57
" Great Yield of, 240
" Manuring, 84
Cotton Plant, History of, 1
" Culture, No.'s 1 and 2, 308
" Dean Variety, 210
" Crop and Prospects. 31
" Its Improved Culture, No. 1, 52; No. 2. 115; No. 3, 243
" Long Staple, 215
" Market, Review of, 63. 94
" Prospect and Prices, 159. 225, 310
" Treatment and Cultivation, Premium Essay, 291
" Oil, 181
" Picker, 271
" Planters, Important to, 309
" Press, New, 314
" Plant, 289
" Planting and Cultivating, 234
" Trade, 65
" Catterpillar in, 3 3
" Insects, 238
" Worms, History, Character & Variet's, 205
" Varieties, &c., in W. Africa, 176
Cow and the Dairy, 45, 79
Cultivation, What is, 157
Cultivation of the Ground Nut, 84
Cup Cakes, white, 111
Cure for Rattlesnake Bite, 63

D.

December, Hints for, 389
Ditching, Hill Side, No. 1, 14; No. 2, 41
" " Premium Essay, 235
" " and Level Rows, No. 1, 316; No. 2, 348; No. 3, 378
Divine Origin of Agricultural Labor, 148
Discoveries in Animal Physiology, 307
Domestic Recipes, 112
Drainage, 169
" 40, 143
Dried Fruit, 45
Dress, Salt Fish, 79

E.

Editorial Notices, 19, 48, 50, 81, 113, 145, 177, 209, 241, 272, 305, 357, 383

Education of Farmers, Colleges, &c., 135
Enormous Tax upon Farmers, 70
Essay read before I. and S. Society, Selma, Alabama, 268
Excretion of Plants, 108
Exchanges, Our Cabinet of, 146, 370
Egg Plant Cooking, 325
Eggs, Preservation of, for Winter Use, 366
Essay, Preliminary, by Prof. L. Harper, 372

F.

Facts, a column of, &c., 144
Fairs, advantages of, 143, 41
Fair, South-Western Industrial, 147
Farmer's Level, 41
Farmer's Boy, a Hint, 47
Farming, Contrast in, 128
" Thorough or Rich, 186
Fencing, 118
Fertilizer, Calcareous, 342
" a liquid, for choice Plants, 58
Ficus Carica, or common Fig, 181
Forces of the Farm, 139
Farmer, American, in Ala. 365
Forest growth, Preserving as Manure, 54, 212
Fruit Culture, Profits of, 248, 280
" Trees, &c., 304
" Trees, Transplanting, 350
" Fresh, Preserving, 368
Food for Stock, winter, 303
Fair, Montgomery County, 308

G.

Garden and Orchard, Hints for Sept., 280
Gardeners, Hints to, 335
Green Sand, qualitative Analysis, &c., 219-311
Geological Report, the State Company, 220
Georgia Wine, 338
Guano, best method of applying, 13
" lasting effects of, 18
" inexhaustible supply of, 47
" direct importation of, 51
" against Manure and Marl Compost, 48
" Plaster, &c., 56
" its use on various crops, 60
" Experiments with & Barnyard Manure, 138
" action of, 295
" a recent discovery, 316

H.

Hay, Oat, nutritive value of, 133
Hints for the Month, 248
" for the Month, Orchard and Garden, 318
Hedges, Thorn, 46
" for Rail Roads, 93
Horticultural Fair, 114
Horticulturist, 51
How Long, 87
How to popularize the taste for Planting Trees, 88
Home Enterprize, 190
How to dry Peaches, 247
Hog Crop, 333

I.

Insects, Economy of, 359
Ink, Indelible, recipe for, 116
Irish Potatoe, How to Keep, &c., 211, 245
Important Inquiries, 115
Iron Trade of the U. S., 285

L.

Lady's Book, Southern, 51
Ladies on Horse-back, 364
Lights—all new—are not true, 344
Light, Importance of, 45
Letter from Dr. Powell, 25
" from Daniel Pratt, 27
" from Marengo Y. A., 150
" on Wool Growing, 337
" on Wheat Growing, 339
" from J. A. Whetstone, 218
Lime, No. 1, Phosphate, 276
Lightning Rods, 255
Lucerne, Its Culture and Uses, 153
" Culture of, 277

M.

Madder and Indigo, 299
Marl, Its Value and Quantity to be Applied, 55
" and Marling, 76, 105, 131, 161, 197
" " notice of, 82, 209
Manures, 321, 356
Manure is Wealth, 85
" Preparation and Use of, 100
" Calcareous, 120
" Power of the Soil to Retain, 141
" It Pays to Use, 303
" How to Preserve, 304
" for Autumn Roses, 334
" Results on a Peach Tree, 79
Meat, fresh, to Preserve, 40
Mechanics, Intelligent, 340
Mildew, to Prevent, 60
Mineral Manure, Theory, 232
Miner's Domestic Poultry Book, 242

N.

Number, Our first, 22

O.

Okra, Green, etc., in winter, 318
Okra Rope, 309
Orchard, 154
" and Garden Hints for Nov., 349
Osage Orange, Treatment, &c., 188
Our Subscription List, 242
Oyster Shells for Peach Trees, 302
Our first Volume, 369
Our New Dress, 113

P.

Paradox, that, 268
Peach Trees, 371

Peaches, Pickled, 336
Peaches at the South, 91
" in Brandy, 329
Period of Gestation, Domestic Animals, 18
Plants, Color of, 331
Plantation Mechanism, 213
Plantation Economy, No.'s 1 and 2, 23, 24; No. 3, 53; No. 4, 83; No. 5, 117; No. 6, 147; No. 7, 179; No. 8, 212; No. 9, 244; No. 10, 276; No. 11, 377
Planting, Table of, 215
Plowing, Table of, 214
Poison, Antidotes, 18
Practical Remarks, "Home made," 245
" " "Clod Thumper," 246
Potatoe, How to Cook, 13
Potatoes, 210
Prune, When to, 94
Prairie Plantation, What may be done on, 118
Peas, 371
" will Kill Hogs, 346
" Will they Kill Hogs? 119
" " " " 145
" " " " 254
Pea Question, 345
Prairie Formations—Explanation of, 312
" Soils of Ala.—New Theory, 313
Policy of the Planting States, 152
Premium List, Robinson Springs Society, 223
Productive Industry, 336
Prospectus of our Second Volume, 306
Pruning the Scuppernong Grape, 363

R.

Red Clover at the South, 302
Review, De Bow's, 243
Rail Roads, 25
" " 251
" " 150
" " 367
Railways, Speed of, 333
Remedy for Yellow Fever, 302
Reply to Dr. Price's Article, 283
Rotation of Crops, 149
Rural Embellishments, 29
Robinson Springs Society, 209
Rice Blancmange, 336
Recipes, Useful, 181
Recipe for Washing and Making Soap, 328
Recipes, Several Valuable, 368
" Valuable on various subjects, 62

S.

Science and Agriculture, 294
Scientific and Statistical, 332
Sweet Potatoes, House for Preserving, 346
Sheep against Dogs, 253
" Cotswold. 365
Slavery, Moral Benefits of, 172
" Commercial Benefits of, 353
Somebody at fault, 177
Strawberries at the South, 330
Strawberries, Grafted, &c. 60
Strawberry, Culture of, 55
Stock Raisers, Hints to, 337
Snakebite, Whiskey for, 300
Solanum Tuberosum, 282
Sumac, Culture and Preparation of, 231
Soap-suds for Plants, 335
Soil, Selecting for Analysis, 282
Soiling Cattle, Best Plants for, 328

T.

The South, Circular, 336
The Bourbon Rose, 59
The Comet, 307
The Right Spirit, &c., 306
The Turnip Plant, 292
The Seed Trade, 143
Tobacco, Cultivation of, 216
Transplanting Trees, 59
Tomatoes, 250
Treatment of Woods, 125
" of Apple Trees and Cucumbers, 281
Turkeys, 271

V.

Vegetable Production of various Climes, 300

W.

Wagon Wheels, 250
Water Gates and Fences, 180
Wheat Culture at the South, 326
Wool and Wool Growing, 36
" Why not grow more? 272
Work for the Month, 241, 275, 305

Y.

Yellow Clover, 276
Yellow Clover, History, Treatment, &c., 277



A Monthly Journal devoted to improved Plantation Economy, Manufactures, and Mechanic Arts.

VOL. 1. MONTGOMERY, JANUARY, 1853. No. 1.

A MEMOIR,

On the Subject of the Cotton-plant, its History, Influence on Commerce, Politics, and the Welfare of the Human Race, and its Probable Destiny as the Great Product of the Southern United States. BY ISAAC CROOM, ESQ., OF GREENE COUNTY.

MR. PRESIDENT:—The interesting task has been assigned to me, of presenting a memoir on the subject of the Cotton plant, its history, influence on commerce, politics, and the welfare of the human race, and its probable destiny, as the great product of the Southern United States.

To do justice to this great theme, demands the research of the historian, the ripe learning of the scholar, and the profound and far reaching views of the statesman. Not aspiring to these high qualifications, I appear before you on the present occasion, with an unaffected distrust of my powers, which nothing could overcome but the consideration, that an imperfect performance of duty is more commendable than its entire omission.

As the Europeans first obtained the Cotton wool from the Arabs, and from countries where the Arabic language was in use, the most probable derivation of Cotton is from the Arabic word Koton. There are however, other plausible derivations for Cotton. Pliny compares the pod of this plant, with the fruit of the quince, a small fruit of the pear family, called in Latin, Cotoneum malum. Respectable lexicographers, from this double resemblance of fruit and name, allege that Cotoneum malum or quince furnishes a plausible derivation for Cotton. Dr. Johnson, in his Folio Dictionary, gives his sanction to Skinner of the quince, because of a different resemblance. He says Cotton is named, according to Skinner, from the *down* that adheres to the mala Cotonea, or quince called by the Italians Cotogni; whence Cottoni (Ital.,) Cotton (Fr.)

The foregoing views instruct us as to the true source of the word Cotton, with as much certainty as is perhaps attainable. Doubts are still left on the mind, but they are not such as will excite much regret, except with the philologist and the antiquarian. The student of useful knowledge, will not perplex himself for a more undoubted derivation, unless he should be persuaded, that it would shed some new light upon the history of the plant.

The Genus Gossypium (Cotton) comprehends four species: 1st. Gossypium Herbaceum; 2d. G. Hirsutum; 3d. G. Barbadense; 4th. G. Arboreum. There are many hybrid varieties of these several species.

The Gossypium is indigenous to the tropical regions of Asia, Africa and America. Europe alone, of the old continents, lying without the tropics, her southern boundary being in 36°.33' north latitude, cannot claim the gossypium as a native plant. In a former geological period of the earth's history, however, it may have been otherwise. Dr. Mantell in his wonders of Geology says, that fossil seed-vessels related to the Date, Cocoa, *Cotton-plant*, Bean, Cucumber, Acacia, Pepper, &c., are found in the Isle of Sheppy, lying in the mouth of the Thames, on the margin of the London basin. Whether these remains

when a much higher climatorial temperature prevailed in Europe than at the present time, or whether they are the results of the Currents of ancient seas, analagous to that by which the shores of the Hebredes are annually strewn with the fruits of torrid climes, is a question which the Geologist has yet to solve.

It is unnecessary to give the various names of the Gossypium in the different countries and languages of the world, its botanical characters and chemical constituents, as these may be readily found in the popular scientific manuals of the day.

Were the Cotton-plant known only for its beauty, it would occupy no mean position in the vegetable kingdom. Its verdant head, formed of its profusion of green leaves, with an oval or globular or pyramidal outline, adorned with white or straw color and red blooms, with its pendant green globula of every size from a bird's to a hen's egg, with the snowy fleece of its matured fruit, all combine to endear it to the lover of the beautiful. This aspect of the plant does not vanish in a day, but continues for months, under favorable circumstances, and southern fields often present beautiful parterres on the plantation scale. What other plant presents the solid as well as variegated parterre of one, or it may be of two miles square, and where else is it to be seen, but on a Southern plantation?

But the beauty of the plant bears no comparison with its inappreciable value for human uses, which makes it secondary, only to the leading cereal plants. It furnishes not only clothing, but directly, food for a large portion of the human family, and is so eminently one of Heaven's best gifts to man, as to distinguish the present era of its diffused use and enjoyment, as a special period of Divine favor.

The history of the Gossypium cannot therefore be without its interest, and I propose now to sketch that history, so far as the meagre facts on record relating to it, will enable me.

Before entering upon this branch of my subject, it is proper to acknowledge my obligations to Baine's History of the Cotton Manufacture and Seabrook's Memoir on the origin, cultivation, and uses of Cotton, in which works, are compiled most of the historical facts relating to Cotton.

As clothing forms the next most pressing want after that of food, the arts of spinning and weaving practiced in the earliest historical periods, and are doubtless coeval with the formation of social institutions. The art of weaving was ascribed by the Greeks to Semiramis, Queen of Assyria. Some of the statues of Minerva represent her with a distaff in her hand, and the Chinese ascribe the art of spinning to the consort of Tao, their first sovereign, who led off one of the first Colonies, after the dispersion of Noah's posterity. The Egyptians and the Mexicans also refer the invention of these arts, to the origin of their natural history. However fabulous and absurd these traditionary claims may seem, yet they indicate a belief in the high antiquity of these most useful arts, which is corroborated by monumental and historical records of an unimpeachable character. The materials first used, were doubtless those found in the several inhabited countries. Flax, wool and the hair of various animals were most generally used. Flax is indigenous to Egypt and Pharoah is represented by the sacred historian as having arrayed Joseph in vestures of fine *linen*, seventeen hundred years before Christ. Gen. 41, 42. The Egytian tombs of Beni Hassan, which are conjectured to have been built by Osirtasen 1st, who was contemporary with Joseph, have sculptured on them the whole process of spinning, from the beginning to its final preparation for weaving. Their oldest mummy cloths sufficiently attest their knowledge of weaving, and these were without doubt several centuries older than the tombs of Beni Hassan. But more than four centuries before the time of Joseph, Abraham being pressed by famine in the land of Canaan, went down into Egypt with his wife Sarah, to sojourn there. From the description given of the country, of Pharoah and his Court, he found the Egyptians in a state of old civilization. And Abraham was very rich in cattle, in silver, and in gold. As Mizraim was the oriental name of Egypt, and as Mizraim and Canaan, sons of Ham are supposed to have colonized and given their names to the two countries bearing their names, enjoying as we have seen so early a civilization, a strong presumption arises from historical data, that the arts of spinning and weaving were correctly attributed to the descendants of Noah, who first led off colonies to people various portions of the world.

In their exode from the land of Egypt, the children of Israel numbered in their ranks, spin-

hands, and brought that which they had spun, both of blue, and of scarlet and of fine linen. They also spun goats hair, and Bezaleel and Aholiab, worked all manner of work of the engraver, and of the cunning workman, and of the embroiderer, in blue, and in scarlet, and in fine linen, and of the weaver. Exod. 35, 25. King Solomon in a later age, made silver and gold as plenteous as stones in Jerusalem, and had *linen* yarn brought out of Egypt, and the King's merchants received the *linen* yarn at a price. Again in Proverbs, 7, 16, he says: I have decked my bed with coverings of tapestry, with carved works, with fine *linen* of Egypt. The Queen of Sheba brought him presents from Arabia, and Hiram, King of Tyre, sent him ships and servants, that had knowledge of the sea, which went with the servants of Solomon to the land of Opher, lying on the Indian Ocean, for gold. Again it is said of Tyre which was on such intimate and friendly terms with King Solomon: Fine *linen* with broidered work from Egypt, was that which thou spreadest forth to be thy sail: Syria was thy merchant by reason of the multitude of the wares of thy making: they occupied in thy fairs with emeralds, purple, and broidered work, and fine *linen*, and coral, and agate—Eze. 27, 7, 16. But Cotton is not once named in the history of Solomon, or of Tyre, although the latter was the commercial emporium of the world, and the former surpassed all the kings of the earth in riches and in wisdom. Nor indeed is Cotton once mentioned in the old or new Testament.

Homer, who lived in the same century with King Solomon, makes no allusion to Cotton. It is certain, however, from passages in his poems, that both linen and woolen cloth were used at that period, in Greece. In the first book of the Illiad, in describing the departure of the Grecian ships from the Island of Chrysa, whither they had come to restore the captive maid Chryseis, to her disconsolate father, he says:

> "Indulgent gales,
> Supplied by Phœbus, fill the swelling sails;
> *The milk white canvas*, bellying as they blow," &c.

In the sixth book of the Odyssey:

> "The queen her hours bestowed,
> In curious works; the whirling spindle glowed
> With *crimson threads, while busy damsels cull*
> *The snowy fleece or twist the purple wool.*"

The use of Cotton was confined to India for many centuries before it was known to the people west of the Indus. It is probable that early as Egypt or China; and that the inhabitants of that country finding the Cotton-plant native to their soil, manufactured it into cloth as early as the Egyptians and Chinese did linen and silk or other Asiatics manufactured woollen cloths. This presumption is strengthened by the belief, that all early societies of the world enjoyed a modified civilization, and from the further fact, that the inhabitants of India have always been stationary in their habits, and when first visited by Europeans, manufactured cotton cloths in great perfection. The aspect of Indian society when undisturbed by aggression from without, has continued calm and unbroken, from century, to century, with scarcely a ripple of change. This endless in statu quo, is well established by the present use of the same rude implements for spinning and weaving, which have been familiar to them for thirty centuries.

We are indebted to Herodotus, the father of History, who lived in the fifth century before the Christian era, for the first authentic record of Cotton. He says of the inhabitants of India: they possess likewise a kind of plant, which, instead of fruit, produces wool of a finer and better kind, than that of sheep, and of this the Indians make their clothes.

The first time the Greeks saw Cotton, was upon the invasion of India by Alexander the Great, in the fourth century before Christ. Nearchus, the Admiral of Alexander, in that memorable expidition, in describing his descent down the Indus, says: The Indians wore linen garments, the substance whereof they were made growing upon trees, and this is indeed flax, or something much finer and whiter than flax. They wore shirts of the same, which reach down to the middle of their legs; and veils which cover their heads and a great part of their shoulders. He also says, the Indian name for the Cotton tree is Tula, and he describes its pods.

Strabo, the learned and accurate geographer, who wrote in the early part of the first century of the Christian era, on the authority of Nearchus, speaks of their flowered Cottons or Chintzes, and also of the beautiful and various dyes, with which their cloths were figured. He says further, that in his day, the Cotton was grown and manufactured in Susiana, a province of Persia, at the head of the Persian Gulf; which was doubtless derived from India,

Arabia, there grows a shrub which some call gossypium, (the Latin name) and others Xylon, (the Greek name) from which the stuffs are made, which we call Xylina. There is nothing to be preferred to these stuffs for whiteness or fineness; beautiful garments are made from them, for the priests of Egypt. Thus we see that the use of Cotton was introduced into Eygpt, through Persia and Arabia, about the commencement of the Christian era, having been previously used for many centuries in India. Linen had before been the staple fabric for clothing, for a period long anterior to the exode of the Jews from Egypt, It was satisfactorily established by the microscopical inspection of the unravelled fibres of the mummy cloths, made by the eminent microscoptician Bauer, that these cloths were made of linen, and Egypt from the days of her early civillization, had not only supplied herself, but also the neighboring countries with fine linen.

The first account we have of Cotton goods, as an article of trade, is contained in the Periplus Maris Erythoi, written by Arrian, a learned Egyptian Greek, in the second century. He speaks of a trade in muslins, calicoes, and other Cotton goods, being carried on by the Arabs and Greeks, with certain towns in India. The substitution of Cotton for linen clothing, must however have been very gradual as well in Egypt, as among the Greeks and Romans, since cotton goods are not mentioned by their writers as articles of import and consumption, although other productions of the East are specified, such as gold, spices, precious stones and even silk. Nor are they enumerated in the Roman tariff as articles of import, subject to imposts. It is highly probable as Mr. Baines remarks, that the use of silk, which was introduced by the trade with the East, was preferred to that of cotton fabrics by the luxurious matrons of Greece and Rome, which was a serious impediment to the early introduction of the latter.

The same judicious writer justly remarks, that to those who have observed the rapid spread of the Cotton manufacture, in the present generation it may appear beyond measure extraordinary, that a branch of industry so apt to propagate itself, should have lingered thirteen hundred years on the coast of the Mediterranean, before it crossed that sea, into Greece and Italy. It may fabrics of India, should not, when known, have been eagerly desired in the Roman Empire and largely imported. Such was the case with silks, which, though more costly, and fetched from the more remote region of China, were sought with avidity by the ladies of Rome, and still more so, by those of the Eastern capital, Constantinople.

When Mahomet made his appearance in the beginning of the seventh century, the use of Cotton fabrics was well established in Arabia and some of the contiguous nations. And however much the relentless cruelties and fanatical barbarities of his successors may merit execration, we cannot withhold from them the credit of having, by their commercial zeal and enterprise, introduced the manufacture and use of Cotton into the various and extensive countries which were subdued by their irresistible valor. Cotton garments were worn on public occasions, by the immediate successors of Mahomet, which had the effect of consecrating their use and making it popular and fashionable with the faithful. In this way, the use of Cotton was introduced into Syria, Asia Minor, and Northern Africa.

The celebrated traveller, Marco Polo, who visited most of the Countries in Asia, in the latter part of the thirteenth century, found the manufacture of a very fine Cotton cloth in Armenia Major; and states that it was abundantly manufactured in Persia, and the Provinces bordering on the Indus, and that it was then the staple cloth throughout India. He mentions but one town in China where it was grown or manufactured, while it is established by an old Arabian work translated by the Abbe Renaudot, that in the ninth century, the Chinese, from the prince to the peasant, were clothed in silk.

From this says Mr. Baines, might be inferred the curious fact, that that early civilized, ingenious and industrious people to whom the world is indebted for the important manufactures of silk, paper and sugar, and who practised the art of printing, and knew the properties of the magnet, and the composition of gunpowder, before any other nation, should have remained without the Cotton manufacture until the end of the thirteenth century, when it had flourished among their Indian neighbors, probably three thousand years. The fact furnishes irresistible proof of the stationary habits and condition of Chinese society. It was not until after the conquest of

tivation of the Cotton-plant was introduced, and the manufacture of it was for some time stoutly opposed by the artisans in silk and wool. In the latter part of the last century, its cultivation was prohibited, as interfering too much with the production of food. China now imports raw Cotton from India, and a large and increasing amount of the manufactured article from Great Britain and the United States.

In Europe, from the tenth to the fourteenth century, although in many places, as Italy, Flanders, and the Hanse Towns, there were extensive and flourishing factories of silk, wool, and linen, no mention is to be found of the Cotton manufacture, except in Spain. Under the Mahomedan dynasty, in the tenth century, the plant was naturalised in Spain, and as successfully manufactured as in the Asiatic Provinces, subject to Moslem rule. Both the cultivation and manufacture ceased with the Moorish dynasty.

From the fourteenth to the sixteenth century, Cotton was manufactured to some extent in Germany, the Netherlands and Italy; and its cultivation and manufacture in European Turkey, followed the subjugation of that Country by the Turks, in the middle of the fifteenth century.

England, which has since so far outstripped all other nations in the extent and value of her Cotton manufactures, was one of the last countries in Europe, to introduce it in her dominions. She had for a long time, imported the manufactured article in various forms, from the Levant, and other places, and Cotton wool for minor purposes, such as beds, candlewicks, &c. It is probable, however, that the manufacture of Cotton took its start, at the time that the crowd of Protestant artisans and workmen, from the various towns of the Spanish Netherlands, sought refuge on her shores, from a relentless religious persecution, which occurred in the latter part of the sixteenth century.

The earliest record of the manufacture of Cotton, says Mr. Baines, is in 1641, at which time, it had become well established at Manchester. Lewis Roberts, in his Treasure of Traffic, published in that year, says: the town of Manchester in Lancashire, must be also herein remembered, and worthily, for their encouragement, commended, who buy the yarn of the Irish in great quantity, and weaving it, return the same into Ireland to sell. Neither doth their industry end comes from Cyprus and Smyrna, and at home work the same, and perfect it into fustians, and vermillions, dimities and other such stuffs, and return it to London, where the same is vended and sold, and not seldom sent into foreign parts, who have means on far easier terms, to provide themselves of said first materials.

The Cotton wool was spun on a single spindle wheel, but little superior to the rude teakwood wheel of India, which had been used by that primitive people for nearly thirty centuries. The loom used, was the old hand loom, the idea of which was derived from the same source, and not greatly improved. The weavers furnished themselves with linen warp and Cotton weft, thus prepared, and disposed of the cloth at the nearest market. About the year 1760, a new custom was introduced. The Manchester merchants sent agents into the country with linen warp and raw Cotton, who employed weavers to work up these materials. The raw Cotton was spun in the weaver's family, or he hired the spinning of it by some neighboring cottager, while he was occupied in weaving. This was one step gained in the progress of improvement, as it saved the weaver the trouble and loss of time previously incurred, in providing the materials for his work. He could now devote the whole of his time to his proper business. The consequence was, that the weavers now began, in an increased degree, to prepare the spinners, in whose department, no improvement had been made. This necessity soon developed an improved mode of spinning, and in 1767, the spinning jenny was invented by James Hargraves, an ingenious carpenter of Blackburn. This great invention at first enabled one person to perform the work of eight, by the old method. But the jenny was only adapted to weft, and it had become a desideratum, not only to increase the supply of warp, but to use the Cotton material for that purpose. Two years later, in 1769, Arkwright's invention not only met these wants, but effected also an improvement in carding and roving. Crompton's mule jenny, Cartwright's power loom, and Watt's steam engine, soon afterwards supplied all the demands for machinery of an unlimited manufacture of Cotton. These wonderful inventions rapidly followed each other as has been seen, and so soon as they were fairly in operation, their influence was clearly manifested

accordingly found, that the import of Cotton into Great Britain, which had been for 1780 and the four previous years, at an annual average of 6,766,613 lbs., rose in 1790 to 31,447,605 lbs., and in 1800 to upwards of 56,000,000 lbs. We shall see, when we come to speak of the history of Cotton in the United States, in what way this enlarged demand was supplied.

The history of Cotton in America, at present the great field of its production, and which bids fair at no very distant day to be that of its manufacture, also, next claims our attention.

The Abbe Clavigero says, that of Cotton, the Mexicans made large webs, and as delicate and firm as those of Holland, which were with much reason, highly esteemed in Europe. They wove their cloths of different figures and colors, representing different animals and flowers, of feathers interwoven with Cotton, they made mantles and bed-curtains, carpets, gowns and other things, not less soft than beautiful. With Cotton also, they interwove the finest hair of the belly of rabbits and hares, after having made and spun it into thread. Of this they made most beautiful cloths, and in particular, winter waistcoats for their lords. Among the presents sent by Cortes to Charles V, were Cotton mantles, some all white, others mixed with white and black, or red green, yellow, or blue; counterpanes, handkerchiefs, tapestries and carpets of Cotton; the colors of the Cotton were extremely fine, as they had both indigo and cochineal among their native dyes. One of their kinds of money consisted of small cloths of Cotton. Humboldt says, they used Cotton in making a species of paper, and their warriors used cuirasses of Cotton, covering their bodies from the neck to the waist.

Columbus found the Cotton-plant growing wild in great abundance, in Hispaniola, and other West India islands, where the inhabitants used Cotton dresses, and used the same material for their fishing nets.

Magellan visited Brazil in 1519, and found the natives accustomed to make their beds of Cotton down.

Ward, in his history of Mexico, says, Cotton was found among the indigenous productions of Mexico, at the time of the conquest, and formed almost the only clothing used by the natives. The cultivation has since been much neglected, so common among the Aztecs, entirely lost. In the terra caliente of Mexico, the Cotton tree propagates itself.

As a practical illustration of the art of spinning Cotton, among the inhabitants of America, at a very remote period, I can show a broach of the yarn, which may have been spun centuries before the discovery of America by Columbus. It is the property of R. B. Waller, Esq., of Greensboro', to whom it was presented by John B. Ritterhouse, Esq., formerly of the same town, but for some years past, a purser in our Navy.

Its history is as follows: Several years ago, while the ship to which Mr. Ritterhouse was attached, was coasting near the shores of Continental America, he availed himself of an opportunity which was presented, to go ashore, and examine the remains of one of those ancient cities, so admirably described in Mr. Stevens' able work. In exploring these ruins, over which large forest trees were growing, he discovered the mouth of a cavern or subteranean vault, and upon removing the rubbish, discovered a stone coffin, in which was lying the skeleton of what he supposed an Indian girl. The skeleton was entire, with exception of the facial bones below the forehead. The hair was also perfect, and reached to the waist. By the side of the skeleton, lay this small broach of Cotton yarn and an earthen cup, which is believed to be now in the possession of a lady of Greene County.

We know that it has been customary from the remotest antiquity, to deposit in the tombs, articles of luxury or fashion, to which the occupants attached a special value or regard while living. The tools and implements of the humble artisan were also on this principle deposited with his remains, in his last resting place.

In whatever light we view this interesting specimen of aboriginal skill, whether as a memorial of excellence, in the early history of American art, or as proof of the common and every day occupation of the class represented by the inmate of the tomb, we shall find it difficult to resist the belief, that it is the work of an age, long since past.

Whether the first wanderers to America, brought with them the arts of spinning and weaving Cotton, or for the first time applied these arts to a new article abounding in their new home, cannot now be determined. Both the race of the emigrants which first peopled Ameri-

in almost hopeless obscurity, but if they went from India prior to the manufacture of Cotton fabrics in the surrounding countries, America was second only to India, in the use of Cotton clothing.

But in the nineteenth century, the Southern States of the North American Union, have far surpassed all other countries in the production of Cotton wool, for the commercial and manufacturing uses of the civilized world. If it be true, as alleged, that the crop of India is from one to three thousand million pounds, still her home demand is so great that her ordinary export is not placed much higher than one hundred million pounds. This export is divided between China and Great Britain, the former country taking the larger part, when the price rules low.

The culture of Cotton was on a small scale, and made but little progress in the Southern States until the invention of Whitney's saw-gin. Prior to this important discovery, the only modes used for separating the lint from the seed were by the fingers and the roller gin, of Indian origin. Both of these processes were so tedious as to preclude an extensive supply of the raw material or one commensurate with the demand, which suddenly sprung up in the latter part of the eighteenth century.

The two species of Cotton cultivated in our country, are the herbaceum (herbaceous), and hirsutum (hairy), known to commerce as the long and short staple, and sometimes classified as Sea Island and Upland, and also as black and green seed. The Sea Island, or long staple, is said to be derived from the species Gossypium Arboreum, and to have become an herbaceous hybrid, by acclimation. The short staple, or green seed, is believed to have been brought from Turkey to Virginia, where the plant was cultivated on the patch scale, for domestic uses, one hundred and thirty years before the revolutionary war.

The first authentic record of the Cotton culture in the Southern colonies, is contained in a pamphlet, dated in 1666, entitled, "A brief description of the Province of Carolina, on the coast of Florida." In the year 1663, the tract of country extending from the 36th degree of North latitude, to the river St. Matheo, was erected into a Province, by the name Carolina, and granted to Lord Clarendon, Duke of Albermarle, and six other

These Proprietors took measures for an immediate settlement. A small colony of emigrants from Virginia, had established themselves around Albemarle Sound, which formed the nucleus of the future State of North Carolina, and of which Sir William Berkeley, one of the Proprietors, was made Governor.

The attention of the Proprietors was next directed to the country lying south of the Cape Fear. This district as far as the St. Matheo river, out of which was afterwards formed the States of South Carolina and Georgia, was erected into a county, by the name of Clarendon. In the year 1664, a considerable number of persons from the Island of Barbadoes immigrated into this county. They brought with them the seed of Cotton which was then cultivated in the West Indies; for the author of the pamphlet in speaking of these colonists, says, they have indigo, tobacco very good, and *Cotton wool.*

Wilson's Province of Carolina in America, published in 1682, says, that the Cotton of Cyprus and Malta grows well, and a good plenty of the seed is sent thither.

The cultivation and domestic consumption gradually increased, until about the period of the revolution; it was grown in small lots, from the Delawase, to the St. Mary's. During the war and after its close, the necessities of the people operated as a stimulus to household manufactures of various kinds, and under this influence home-spun Cotton cloths, to the end of the last century, supplied the chief material for clothing whites as well as blacks, on the plantations of the South.

Alexander Hamilton, in his celebrated report on manufactures made in 1790, says: There is a vast scene of household manufacturing, which contributes more largely to the welfare of the community, than could be imagined, without having made it an object of special enquiry. Among other things, he enumerates Cotton hosiery, coarse fustians, and muslins, checked and striped Cotton, bed-ticks, coverlets and counterpanes, various mixtures of Cotton and wool, and Cotton and flax, and in many instances, not only sufficient for the supply of the families in which they are made, but for sale, and even exportation. And again, evincing his wonderful sagacity, he says, the faculty of the United States to produce the raw material in abundance

ferior to some which is produced in other quarters, is nevertheless capable of being used in many fabrics, and is susceptible in all probability of being carried by a more experienced culture, to still greater perfection.

Four years earlier, Mr. Madison evinced the same far reaching mind, in the remark he is reported to have made to a friend, during the Federal Convention at Philadelphia—viz: That from the garden culture of Cotton so extensively practised in Maryland and Virginia, he had no doubt but the United States, would at some future day become a great Cotton producing country.

The Sea Island or long staple Cotton although classed as herbaceous, is derived from Gossypium Arboreum. The seed were first sent from the Bahamas, to gentlemen in Georgia, in the year 1786, and experiments made with them soon afterwards on the Sea Islands near the mouth of Savannah river. The plants did not bear fruit the first year, but the winter proving mild, the rattoons bore fruit the following year, and in this way the plant became acclimated. The seed are said to have come first from Persia.

The successful growth of the long staple Cotton, is confined to a string of Islands stretching from Georgetown, in South Carolina, to the St. Mary's river, in Georgia, a distance of nearly two hundred miles, and including a belt of the coast not more than fifteen miles in width. Mr. Spaulding very justly asks—If Frederick the Great, never forgot him, who first introduced a better description of rye into Prussia, and if Swift is right in saying he merits a great name, who causes two blades of grass to grow, where but one grew before, why should we deny to the dead, what may be their due? The first cultivators of Sea Island Cotton, were Josiah Tatnale and Nicholas Trumbull, on Skideway Island, near Savannah; James Spalding and Alexander Bessitt, upon St. Simon's Island, near the mouth of the Altamaha, and Richard Leake, upon Jekyl Island, near St. Simon's.

Of the many and great improvements made in the quality both of long and short staple Cottons, in their preparation for market, of the best methods of manuring, preparing lands, planting and cultivation, and of the climate, soils and implements, best adapted to perfect the plants, my limited time will not allow me to speak—nor made known through the valuable agricultural journals of the country.

There was a great impulse given to the cultivation of Cotton, about the time the experiments before spoken of were being made in Georgia, in every quarter of the world suited to its growth and in commercial connection with England. The cause was obviously the improvements which had been made in manufacturing the article. It was under this influence, that the American planter imported new varieties of seed from abroad, with the design of enlarging the culture as well as improving the character of the Cotton plant. Experiments soon removed all doubts as to success in growing it. But there still remained an obstacle seemingly insurmountable. The only known modes of disengaging the wool from the seed, were too slow, to admit the hope of an extensive cultivation. And here perhaps is the most interesting point in the history of the Gossypium. The genius of Hargraves, of Arkwright, of Crompton and of Cartwright, had given to the world machinery for spinning and weaving it to any desirable limit, and Watt had furnished a motive power, which never flagged from fatigue or hunger, and was likewise susceptible of any required multiplication. The enterprise and energy of American planters had placed beyond doubt their ability to grow the plant. But yet until some plan could be devised to facilitate the cleaning the wool of its seed, Cotton must occupy a subordinate position to the staples of flax and wool. A want so urgent, a demand so pressing, did not appeal in vain to the genius of Anglo-Americans. Deep called unto deep and was answered. The genius of Whitney came to the rescue of his country. He invented the saw-gin, and thereby accomplished a revolution in Agriculture and Manufactures, without a parallel in the history of industrial pursuits.

A brief sketch of the origin, progress and completion of this important invention cannot be out of place, in a memoir like ours.

The legislature of Georgia made a large and valuable donation of lands to General Nathaniel Greene, lying on the Savannah river, for his revolutionary services. Gen. Greene resided on this estate until his death. His widow afterwards married a Northern gentleman by the name of Miller, who was by profession a lawyer.

ted, was a friend of Miller, and Mr. Miller persuaded him to emigrate to the South, gratuitously offering him a place in his family, his instructions, and the use of his library, while he was qualifying himself for the practice of law. Whitney being without means, and desirous of acquiring a profession, gratefully accepted the kind offer of his friend, and took up his abode with him on the banks of the Savannah. Having a strong mechanical cast of mind, and but little relish for black letter studies, and seeing so much interest exhibited around him, for a more expeditious mode of cleaning Cotton, he resolved to attempt the solution of the problem. Accordingly he shut himself up in his room and went to work. To Mrs. Miller he confided his purpose, but did not disclose to her his progress. When he had been secluded for several weeks, Mrs. Miller who was keenly alive to the importance of the result, in her great impatience, ventured one day to ask him what progress he made? She was delighted to hear Whitney say, that he had succeeded in pulling the wool from the seed, but he could not clear his machine of the wool, when thus separated. She begged him to permit her to see it operate. He did so. As the cylinder revolved, the hooked wires surrounding it, were filled with cotton lint, but there was nothing to relieve them from it. Mrs. Miller after observing the operation of the machine for a few moments, stepped aside, and returned with a broom in her hand. Placing herself behind the machine, as the revolving cylinder brought the wires to her loaded with Cotton, she rapidly brushed it off, by a motion of her broom reverse to that of the cylinder. Young Whitney, after observing her for a short time, became absorbed in thought, when he suddenly exclaimed, Oh, I have it now! He immediately retired to his study, and upon this simple suggestion, added the brush wheel to his gin, by which his great work was accomplished. If this statement be true, the world should honor the memory of Mrs. Miller, for her agency in the most important invention of the 18th century. Thus was invented Whitney's saw-gin, which has produced a greater change in the pursuits of man, and worked a mighter influence on his physical, social and moral enjoyments, than any discovery of modern times.

And what shall we say of such a benefactor? "The inventor of the Cotton saw-gin." This however is eulogy enough. These few words comprehend more of honor and gratitude to his name, and of interest to his country, than is contained in the memoirs of an Alexander or a Cæsar, or of all the selfish and ambitious conquerors recorded in the world's history. The truth embraced in this simple epitaph, secures to Whitney a deathless fame and enrolls his name by the side of a Franklin, a Jeaner, a Watt, a Fulton, an Arkwright, as one of the best friends of his species.

The true Cotton era commenced with Whitney's saw-gin—and we are all so familiar with its history since that period, that it is unnecessary to dwell on it, only so far as it will appear, in showing its commercial, moral and political influences on the human race.

Our duty is next to show, the influence of Cotton on commerce. In doing this, we have it in our power fortunately to call to our aid figures, which proverbially, do not lie. We will take three periods, in the histories of Great Britain and the United States, which two countries engross perhaps three-fourths of the foreign commerce of the world. The imports and exports of Cotton, and the total imports and exports of these two countries, will be given for these three periods, by which exhibit, we believe, all doubts must be removed not only as to the relative importance of Cotton, but its unrivalled influence on the commerce of the world.

In 1792, the United Kingdom imported of Cotton wool..... 34,907,497 lbs.
Same year exported..... 1,485,418 lbs.
In 1792, Total imports.....£17,716,752
" " exports..... 18,621,942
In 1832, the United Kingdom imported Cotton wool..... 286,832,525 lbs.
Same year exported..... 18,027,940 lbs.
Total imports same year.....£48,161,661
" exports " " 36,652,640
In 1849, entered for consumption into the United Kingdom, Cotton wool..... 758,841,650 lbs.

Same year, export manufactured Cottons, value $130,000,000, which is more than half the exports of the United Kingdom for this year.

In 1792, Imports into U. S. of Cotton wool.. 51,470 lbs.
" Exports " " .. 138,000 lbs.
" Total imports " " ..$31,500,000
" " exports " " .. 20,753,098
In 1832, Imports manufactured Cotton.....$10,996,230
" Exports raw Cotton..... 31,750,000
" Total imports.....101,029,266
" " exports..... 87,176,943
In 1849, Imports manufactured Cotton about $15,000,000
" Exports Cotton wool..... 66,396,967
" Manufactured Cottons..... 5,000,000
" Total imports.....$147,857,439
" " exports..... 132,066,955

These statistics strikingly illustrate the great

exercised by the article of Cotton, in expanding commerce to its present overshadowing dimensions. We might properly add, the increment it has made to the internal and external trade of other nations, and also its incalculable value to the immense internal trade of the U. States and Great Britain. In our own country, the planter of the South, the farmer of the West and North-West, the manufacturer of the North, the merchants of the whole country, the Steamboat of the rivers, the coasting Vessel, the Rail Road and even the Telegraph, are all more or less dependent on Cotton.

In 1849, the United States exported above seventy millions dollars worth of Cotton, and some twenty-five millions of other agricultural products, the latter being principally for the use Cotton manufacturers abroad, thus basing near $95,000,000 of our exports upon Cotton. As foreign commerce is but an exchange of commodities between nations, this amount, being nearly two-thirds of our exports, for 1849, should be credited with the same amount of imports. Did time allow us, we could easily multiply striking views, all going to show that Cotton is the great leverage power of the world's commerce.

If it be true, as has been alleged, of which we think there can be no doubt, that the effect of commerce is to inspire as well as gratify new desires and wants, to subdue hostilities, to soften national asperities, and religious antipathies, to promote civilization and refinement, justice and truth, to crush oppression and war, and establish religion and peace, any thing which promotes and cherishes commerce, must at the same time advance the welfare of the human race. But it is due to this branch of my subject, to show further that Cotton possesses other and inherent properties, singularly adapting it to human use and comfort.

The peculiar qualities of its fibre, uniting length, strength, firmness, softness and cheapness, its spiral form, its chemical properties as a non-conductor of heat and electricity, and its absorbent properties, all unite to make it the healthiest, cheapest, the most comfortable and convertible of existing materials for human clothing. To these may be added the extensive habitat of the plant.

The wonderful improvements which have with the increased cultivation of the article, have so much reduced the price of clothing made of this material, that the poorest laborer may now, not only supply himself with comfortable garments, but his house with neat and comfortable furniture. As Mr. Baines truly remarks, the humblest classes have now the means of as great neatness and even gaiety of dress, as the middle and upper classes of the last age. A country wake in the nineteenth century may display as much finery, as a drawing room in the eighteenth; and the peasant's cottage may, at this day, with good management, have as handsome furniture for beds, windows and tables, as the house of a substantial tradesman sixty years ago.

The increased facility of procuring Cotton clothing and a more abundant supply, have promoted cleanliness and with it health, to such an extent, during the present century, as to increase the average duration of human life, in those countries where it is freely used.

Less time and money are required for necessary clothing, and of course more of each is liberated from this object, for intellectual and moral culture and social enjoyment.

It is unnecessary to go further, but I will not omit to state, that it confers manifold blessings on the human family, by diversifying employments, and affording the means of subsistence and of independence, to millions who might otherwise be destitute.

As regards, in the next place, the influence of the Cotton plant on politics, startling or absurd though the enunciation may seem, yet, that it exerts an undeniable and powerful influence on the political state of the world, none can deny, who will bestow a little reflection on the subject. The spirit of the age we live in, is a commercial spirit. This is the master influence of the times. As has been tersely and truly said, "Commerce is King." The unmistakeable tendency of commerce is to spread christianity and civilization, to promote the arts of peace and feelings of brotherhood among nations, to repress the ignoble ambition of plunder and territorial aggrandizement and to foster in its stead, the exalted desire for universal progress and prosperity, that the legitimate wants and wishes of all may be gratified. Under the operation of results so benign and salutary, the political character of those nations enjoying an active commerce, un-

tion which it works, may almost be said to become, in its embraces, as clay in the hands of the potter. If this be true, the influence of the Cotton plant on polities is sufficiently established, by what has been said, to show that the rapid growth, the present flourishing condition and the future welfare of commerce are and must be greatly indebted to this great staple.

But more especially do the political conditions of Great Britain and the United States rest upon this basis. The latter grows four-fifths of the raw material, and the former manufactures the larger half of the Cotton grown for market. In this way is enacted a political bond of friendship and peace, between these two powerful and aggressive nations, stronger than hooks of steel, and the effects of which, to their own welfare, as well as to that of the rest of the world, it is difficult to estimate. If we direct our attention to our own country, we cannot fail to perceive that the great conservative spirit which binds together the different members of our confederacy, and preserves our political Union, is to say the least, cherished and invigorated, by the Cotton interest.

The Cotton planter of the South furnishes a market for the grain, the provisions and the stock of the West and Northwest, the raw material and a market for the manufactures of the North of every kind and sort, directly or indirectly more than half of the exports and the means for an equal amount of imports and revenue. It cannot be doubted that such an interest supplies a bond of political Union, stronger than the iron bands which are so happily uniting the widely separated parts of our broad land, stronger than a common origin and common history, nay stronger even, than our glorious Constitution.

But again—that wealth confers individual as well as political power has grown into a proverb. One of the ablest English writers on Political Economy, says emphatically, that it was the wealth and energy derived from the Cotton manufacture, that bore England triumphantly through her dreadful conflict with Napoleon, at the same time that it gave her strength to sustain burthens which would have crushed her people at any previous period, and which could not have been supported by any other people. Let it here be remembered that the total import of Cotton wool into England in 1915, the period referred to, was only 96,200,000 lbs, and in 1850 further, that her political wealth and power in the last thirty years, have increased in no very disproportionate ratio, to her increased consumption of Cotton.

And how, let me ask, would the immense debts of our second war with Great Britain, our Florida and Mexican wars and indemnity, have been liquidated, without the aid derived from our great Southern staple? The statistics of the country demonstrate that Cotton has been directly or indirectly the chief source of our revenue for the last twenty-five years, and besides, a leading cause of our unparalleled advancement in wealth and political greatness.

From the foregoing truths, the corollary necessarily results, that the slave-labor of the United States, has hitherto conferred, and is still conferring inappreciable blessings on mankind. If these blessings continue, slave-labor must also continue, for it is idle to talk of producing Cotton for the world's supply with free labor. It has never yet been successfully grown by voluntary labor. Great Britain made the experiment in her West India colonies during the present generation, and it was a signal failure. In 1791, the West Indies exported to the Mother Country twelve millions of pounds of Cotton, in 1801, seventeen millions, in 1834, only eight millions of pounds, and the supply from this quarter is at present but little more than nominal.

It is stated upon undoubted authority, that an attempt was made some ten years since, by a Louisiana planter, to procure five bushels of seed from the Bahamas, formerly a favorite English Colony for Cotton, and that quantity could not be procured on the island.

However therefore paradoxical it may appear to the narrow bigot or the transcendental higher law votary, it is nevertheless true, that in the dispensation of an All-wise Providence, the peculiar institution of the Southern States, contributes an indispensable support to human progress and prosperity, and it is a consolotory reflection, that our slaves are carried along with the onward current of improvement, being in intelligence, in comfort, and in morals, as much superior to their native brethren in the African deserts, as they are inferior to the white race whom they serve. While the Southern slave occupies a middle position in the scale of civilization, his African brother is so low as scarcely

hibiting, it is true, something more of the type of humanity in his external form, but less in his disposition and habits.

It remains for us to speak of the destiny of Cotton, as the great product of the United States.

In deciding this important question fraught with so much interest to the Cotton growing States, we must necessarily be guided by the history of the past. Conclusions thus reached, may not be as certain as recorded facts or mathematical truth, yet they may be sufficiently so, to command belief, excite hope and determine action.

Our first enquiry will be as to the nature and extent of future demand and supply.—The many comparative advantages of Cotton over every other known material for clothing and other purposes, have established its superiority and fixed its use on a basis, as permanent as that of wheat for bread. When to this we add, the immense interests commercial, agricultural, manufacturing and mechanical, involved in and dependent on it—and further reflect that the greatly increased supply for the last twenty years, so far from satisfying the demand seems only to have increased it, that there seems to be no limit to its consumption, but the want of ability in the consumer, that from the restricted area of supply and the exhausted and exhausting condition of that area by an improvident cultivation, the maximum of supply may be already approximated, that one-half the world has yet to learn its use. I repeat, when we consider all these, we are forced to the conclusion, that the Cotton demand will know no end, nor any limit, but that of supply, in the world's future history.

It is not less certain, we think, that the Southern States of the American Union, must be looked to as the chief source of supply, if not for an indefinite, certainly, for a long period in the future. The past and present, the character of the people, their peculiar institutions and local advantages, experience and speculation, all tend to confirm this belief.

These States for more than a quarter of a century, have been the great Cotton producers of the world. They have the soil and climate adapted to the plant, the labor indispensable to its successful cultivation, ample resources in food and clothing to make this labor efficient, and enNo other portion of the world possesses these combined advantages, nor can they indeed hope for them without great changes, which if practicable at all, will require a fundamental remodelling of their social institutions and generations of time to accomplish.

The other Cotton growing countries are, Brazil, Egypt and India, the West Indies being only nominally so, since the English emancipation act. As regards Brazil, she finds a more profitable crop in coffee, the value of which is constantly advancing: her exports of Cotton has been regularly declining for the last twenty years, and chiefly from this cause. From 1845 to 1850, the crop of India declined 24 per cent.

There has also been a regular decline in the crop of Egypt.

Nothing can permanently increase the supply of Cotton from these countries, but such prices as are incompatible with a liberal consumption, and even at high prices, this supply would fall very far short of satisfying the world's demand.

The more profitable cultivation of coffee then, forms a reasonable presumption against any material increase of supply of Cotton from Brazil. The precarious character of her government, removes all fear from Egypt. The character of the population of India, to say nothing of its density, indolent, listless, enervated, with barely food enough of the simplest kind, to sustain their feeble bodies; with the fact, that the British Government have spared no effort to extend the growth of Cotton among them for the last twenty years, without success or encouragement, places India in the same category. Africa and Spanish America labor under obstacles greater than those enumerated.

The result from these views is a probability so strong as to be little short of certainty, that the Southern United States must, for an indefinite period in the future, continue to supply the world's demand for our great Southern staple. And here we might properly draw to a close. But we will trespass a few moments longer on your attention, for the purpose of exhibiting the progress of supply and demand for the last five years. It will be found that consumption has exceeded production, the former having advanced 19 per cent. and the latter only 9 per cent. At the end of 1844, the Cotton on hand in Europe was 1,101,000 bales; at the end of 1849, with a

646,000 bales. This surplus has been gradually diminishing, although the price for the last two years has been so high, that in former years it would have operated as a material check on consumption. When in addition to this, we reflect, that we have reached the western limit of the Cotton region, that the exhausting character of the plant and the mode of its cultivation are contributing to a rapid deterioration of the soils on which it is grown, that the number and wealth of its consumers are annually increasing, and that the Southern United States must be the chief source of supply, the grateful assurance is forced upon our minds, that the great Southern crop will be fostered by remunerating prices.

And in conclusion, I may be indulged in saying, that no portion of our country has more cause for congratulation and gratitude, than the great and honored State of Alabama.

Although she has been redeemed from the wilderness, as of yesterday; to-day, the single item of Cotton, pre-eminently distinguishes her as the first exporting State of the Union.

With a present Cotton crop exceeding that of the whole United States in 1824, and greater than that manufactured by England in 1829, with not more than one-fourth of her lands in cultivation, to say nothing of her exhaustless mineral resources, Alabama may justly lay claim to natural resources inferior to those of no State of equal territorial extent; and when she shall have extended the cultivation of her precious staple to its practicable limits, and made available her abundant water power and resources for steam power for manufacturing purposes, and completed her well-devised system of Internal Improvements for facilitating transportation and intercommunication, all of which may be easily accomplished in the present century, few States will equal her in prosperity and the means of a high cultivation.

Then will Alabama appear as a star of the first magnitude, in a brilliant constellation of sister Republics: and may she, proud in her position, continue to shine brightly and more brightly,

"Until the great globe, and all which it inherits, shall dissolve."

How to Cook a Potato.——Wash it well, but let there be no scraping. At the thickest end cut off a piece the size of a sixpence. This is the safety valve through which the steam escapes, and all rents in the skin are thereby prevented, just as the valve prevents a steam-

Best Method of Applying Guano.

I am satisfied from experience and observation in the use of Guano, for the past twelve years, that the best method, decidedly, of applying it to crops in our climate is, to plow or spade it into the ground; and autumn is the best season for doing this, as it gives time for the pungent salts contained in the guano, to get thoroughly mixed with the soil before spring planting. Do not fear to lose the guano by plowing it in *as deep as you please*—it will not *run away*, depend upon it. At the south, it loses half its virtues if not plowed in at least three inches deep; six to twelve inches would be still better.

Spread broadcast on grass land, late in the fall or very early in the spring. If not plowed in before sowing buckwheat, rye, or wheat, then spread it broadcast after sowing the grain, and harrow well and roll the land. This last operation is quite important.

Caution.—Never put guano in the hill with corn, no matter if covered two or three inches deep; for the roots will be certain to find it, and so sure as they touch the guano, so caustic is it, that it will certainly kill the corn; the same with peas, beans, melon vines, in fact most vegetable crops. Wheat and other small grains have so many roots, and litter so well, there is no danger of guano killing them when sown directly with the seed. Still, as before remarked, it is better to plow it in before sowing the seeds.

After corn has come up, the only safe way of applying guano to this crop is, to take about a table spoonful, at the first time hoeing, and dig it in an inch or two deep, around the corn, six inches at least from each stalk. A table-spoonful is sufficient unless the land is very poor; and with this quantity it will take about 250 to 350 lbs., per acre, according to the distance the hills are placed apart. If the soil be rather poor, a second dose administered in the same manner, at the time the corn first shows its silk, will add considerably to the yield in grain, if followed by rains, but little or nothing to the growth of stalk. Guano increases the size and growth of the grain, more than it does that of the stalk; hence one must be content to wait till the grain is fully matured before giving an opinion of the virtues of guano.

Before applying the guano, it is better to mix it well with an equal quantity of plaster of Paris or charcoal dust. Either of these substances help to retain the ammonia and prevents its evaporating.

The genuine, unadulterated *Peruvian* guano, is so much superior to any other kind, that it is in reality the *cheapest*, though the price is considerable higher than that of other qualities.

As corn is very late this year, farmers will do well to apply guano to it. This will accelerate its growth, give a larger crop, and cause it to ma-

Hill-Side Ditching.

Jocassie, July 2d, 1852.

Dr. N. B. Cloud.

Dear Sir:—On my arrival at my farm in Hancock county, from Savannah, where I am engaged in the Commission business, I found your letter of the 5th of June, covering a prospectus for an agricultural paper to be published in Montgomery, Ala., with a request that I would furnish you with an original article on Hill-side Ditching and Horizontal Culture. Referring to an article of mine on that subject which you had seen in the Southern Cultivator.

The article referred to, was prepared for and published first in the Recorder Supplement in 1847, at the request of Mr. Howard of your State, and the editors of that paper. Subsequently it was published in the Southern Cultivator, and was last year re-published in the Recorder Supplement at the request of Hugh Lawson, Esq., of this State. I send you a copy of the Recorder Supplement of last year, that you may see in what estimate the article was held by Mr. Lawson and the editors. That article was written as the A B C of the system, that any farmer by studying it perfect might put it into practice. And if I were to write fifty times on the subject, having that object in view, I should in substance write the same thing, not having had in the practice the first reason to alter a single principle therein laid down. Therefore, I can see no use in writing over again what is already in print. In the article published there are some typographical errors, some words and parts of sentences that might be changed for the better, but as to the matter, it would be substantially the same if I were to write again. And what is a little wonderful, the article has never been attacked by any one that I have seen. Had it been, or should it ever be, I shall feel called on to defend it and have no fear of being able to do so successfully.

I wish you great success in your praiseworthy enterprise, you deserve to succeed and I hope you will. The country, however, will be a greater beneficiary than you, even if you succeed.

Crops are fair in this country, and if the season continues favorable, the husbandman will be rewarded for his labor.

With high regard, yours,

No. I.

To Augustus Howard, Esq.

Dear Sir;—Before the receipt of your letter of the 19th May, I had promised the editors of the Recorder, at their special request, an article for the July supplement, on the subject of graded hill-side ditches, and the horizontal method of culture From their letter requesting an article on that subject, it is obvious that I was selected because of the article over my signature published in the April Supplement, finding fault with many of the systems now practiced by farmers on that subject—alleging that various enquiries were made of them, induced by that article, which, it appears, was the cause of your inquiries being made. Being under the promise that I was to the Editors, and finding your letter asking information of the same sort, I determined to have your letter published and answer it through the same medium. By this course I could comply with your request and fulfil my engagement with them at the same cost of labor that it would take to answer one. To reply to your enquiries fully in one communication, would require more space than the Editors could well spare in one number; therefore I will continue my letters to you monthly until I have fully answered all your interrogatories.

Thus, sir, you have my reason for the publication of your letter without your consent, which I hope will be a satisfactory apology on my part for the liberty taken.

That I may the more fully explain the system on which I am about to write, and the more readily be understood by you and others who may be desirous of information on the important subject of graded hill side ditches and the horizontal culture, I will begin with the A B C of the method of operation.

The first thing then is the construction and description of an instrument absolutely necessary to lay off the work correctly—the opinion of many that they can lay off as good a ditch or run as level a row by the eye, to the contrary notwithstanding. Take two strips of plank, 1 inch thick, 3 wide and 8 feet long, put them together at one end by letting them into each other at such angle as that the other ends will be just twelve feet apart from outside to outside. Take two other strips of the same width and thickness and of sufficient length, and let the end of one into the side piece, one-third from the top or crown, and the other end one-third from the foot of the opposite or other side piece. The other piece must be let in the same way from the opposite side piece, which will cause them to cross each other, where they must be let into each other—the whole put together with inch screws, firmly. Then draw a line from the outer corner of one foot to the outer corner of the other, mark and saw off. This will make the instrument flat on its feet when raised up on them. It would

a strip one inch thick and as long as the feet is wide and even with the bottom, to keep it from sinking in the ground where it is soft. The instrument now being complete—all but having the level and grade block attached to it—should have two good coats of paint to protect the wood from the influence of the weather. Then procure a carpenter's spirit level, such as they use in leveling sills and plumbing walls. Attach one end of it to the cross piece by means of a screw; then place your instrument on the ground as nearly level as you can judge by the eye, bring the other end of the level on the other crossbar, up or down until the vacuum or air bubble in the tube stands in the middle or centre. Then firmly grip the level to the cross bar with the hand, or a hand vice which is better, carefully mark the feet of your instrument and change the ends, being careful to put the feet precisely on the same ground they stood on before. If the air bubble in the tube stands at the same place, you may be certain of having a perfect level. Should you not have the true level—and it would be an accident if you did—you will move the end of the instrument on higher or lower ground, as may be ndicated by the bubble, until the vacuum or air ubble in the tube stands one half the distance etween the true level point and the point that it occupied after the feet were first reversed; thus you will continue to change until the air bubble in the tube will stand at the same point with the ends reversed, when you may be sure of having the true level. Then firmly secure the end by means of a screw as in the case of the other end. A better plan for attaching the level to the instrument is by a box, that will just receive the level, and attach the box just as I have directed for the level, with the level in it, because you can more conveniently take out the level for other purposes, than to unscrew it from the cross bars, by having a hole in the bottom of the box through which you can raise it out with your finger.

Having got the true level, it is now necessary to get the grade for your ditches. To do this, you will take a block just as broad and long as the foot of your instrument, and as thick as you want your grade in 12 feet—say 3, 4, 5, or even 6 inches, if you want your water to run so fast as to keep out of the way of that which is coming on behind—and attach it to a strip of the same width and thickness of the side piece, and some 12 inches long, at such angle to the block as will make the strip thus attached to the block run up and be even with the top and bottom edge of the side piece when the block is placed under the foot of the instrument. This strip with the block attached should be firmly screwed on to the side piece, and you have a farmer's level, ready graded for running your ditches. This minute description of a farmer's level I deemed necessary as many are using very clumsy instruments, with done with the one than the other, and with double the ease to the operator.

The instrument or level as I shall now call it, being ready all but setting on the proper grade, brings up that question on which there is such a diversity of opinion, varying from three to six inches in twelve feet. In the discussion of this point, I take this position as incontrovertible: that the true grade is one that will bear off the water without breaking over the ditch or washing it any deeper. For if the grade is so great the ditch continues to wash deeper by every heavy rain, it will have soon to be considered a gully, and treated accordingly. By this rule every one can determine the proper grade for himself. More than ten years' experience has confirmed me in the opinion that the grade that I give to my ditches is the true one, and that a material departure either way will prove mischievous. Slight variations either way, will make very little perceptible difference. It is safer, however, to depart slightly on the side of a greater grade than on the side of too little. Because, in the one case your ditch being incapable of carrying off the water, must break over, while in the other case, the mischief that accrues is only the washing of your ditch. A very good and substantial reason why the grade should be no more than sufficient to bear off the water is, that the less the declension or grade of your ditch to answer the purpose for which you intend it, the better it will encircle the hill, and thereby protect more of the land which it was designed to do. In other words, suppose you have a ditch to run 300 yards long, it will take 75 strides of your level to run it; and by calculation, you will find that the mouth of your ditch will be just 18 feet and 9-12 lower than the beginning point. But again suppose, by way of experiment, that you change your grade from 3 to 6 inches and go to the same starting-point and go the same distance 300 yards; by calculation, you will find that the mouth of the ditch will be 37 feet and 6 12 below the starting point. This difference in the grade of your ditches, if the grade of your land was only moderate, might make the mouths of the ditches, as above spoken of, from 50 to 150 yards apart, from which you will readily perceive, if you should select the six inches as your grade, that all the land between the points where those two ditches would run would be unprotected, supposing that to be the first ditch and nearest the top of the hill. I will now, sir, leave this branch of the subject with you, to judge whether I have sustained myself in the position set out with.

The grade given to my ditches is 3 inches in 12 feet on porous soils that absorb water freely, and 3½ to stiff argillaceous soils that absorb water less freely—3¼ and 3½ I would put down as the very highest point. I have one field 3½, and

deepen the ditch as to make it mischievous. I have found that the grade given to my ditches succeeds well when other things are done as they should be, of which I am hereafter to speak.

Having gone through with the question of grade, and given the one used by myself, the use of the level is next in order. The level being ready, with the grade block screwed on the thickness you intend to have your grade you will take it to the field intended to be ditched, accompanied by a small boy with a hoe suited to his size. The operator should first take a general view of the field and get as well in his mind as possible the variations of the hills and the common undulations of the land, and then approach the highest point and examine round the hill from 30 to 75 yards, in proportion to the fall, to find out where the first collection of water will take place. This you can judge of by the breaks or undulations of the surface. Having determined that point, you of course will start your ditch a few yards below that point, suffiecintly near to catch the water before mischief can be done the land. You next determine to which side of the field you will carry the water; and that done, you place the level with the end that has the grade block on it in that direction and continue to move one or the other end up or down hill until the air bubble stands in the centre of the tube; you then have a grade precisely the thickness of the block; for the level being perfect before the block was put on and the block now being on, and the air bubble standing in the centre, shows conclusively that the land on which the block stands is just the thickness of the block lower than the other foot of the level. You then direct your boy to dig a small hole just in front of the forward end of the level as a sign to show where the level stood. The level is then moved forward in either direction that you may please to go and the hinder foot is carefully placed where the front one stood, and you look to the air bubble in the tube to see if it is right, if not, you move the forward end up or down, as may be necessary, until the bubble stands at the centre, when you order your boy to dig, and move on as before until you gain the end. You then return to the beginning place and run as before, taking care not to turn your level round unless you should want to change the direction of the water and throw one-half out at one side and the other half at the other, which I invariably do, if it is practicable. Just here, I will remark, that all new beginners are apt to select some point at which they want to discharge the water of the ditch, and are apt to force the level up or down, as the case may be, to gain that point. This is wrong. The level should be allowed to select its own point, after you start, which it will always do better than the operator, if properly managed. Again, by forcing the level, sometimes up and then down, in the same ditch in operator, mischief is apt to accrue when heavy falls of rain have to be encountered, by water passing faster where the grade is increased than where it is decreased, so that the water in the parts of the ditch where it moves slowest, is crowded on by the water from that part where it has more grade and moves faster, and thereby endangers the ditch. Once broke—and mischief ensues to the land below; hence it is important that the grade should be kept as perfect as possible. Again, some operators are so tenacious of the coming out point, or the point where they want to empty their ditch, that they frequently make that the starting point, and they about as frequently have a ditch where it does no good. The first ditch having been laid out, you move down the hill from 50 to 100 yards, regulating the distance agreeably to the fall of the land and the probable chance for water to collect so as to wash the land, and there select another starting point as in the first case, and run as before.

Thus you continue on until the field is finished. It may not be amiss to remark that more depends on the judgement of the operator in the starting point for his ditch than any thing else; for if you start at the proper place, and manage the level properly, the balance will be sure to be right. In selecting the starting point, the only guide is your judgement, and when you find a place that you feel satisfied water will collect and wash the land below, be sure to make that a starting point—or rather a few yards below, and throw your water in whatever direction may best suit the circumstances of the case.

The next thing to be considered is the open- of the ditches and the implements necessary for doing it. The first thing needed is a scooter plough, horse and boy, and as many hands with weeding hoes as you may think necessary or proper to operate with. You will start ahead of the horse, directing the ploughman to follow you, taking care to follow carefully the chops in all their meanderings, directing the ploughman to do the same. This is important that your grade may be kept perfect. Three furrows are run with the plough, the two last on the upper side of the first, and just near enough to break the ground into each other. The hands with their hoes then scrape out the dirt on the lower side. On soft land this is sometimes sufficient, where the land lies pretty well; but usually, I run three or four more furrows in the bottom, not so deep however as the first and take that dirt out. In the last operation, I usually put behind a hand of the best judgement, to finish off the ditch, preferring to have the ditch rather wide than deep, concave in the bottom, with the deepest part nearest the upper side, so that the weight of water will not be against the embankment made by the dirt taken out of the ditch. That part of the ditch occupied by the water is usually about two feet wide and 6 to 10 inches

to take a level from the embankment below is from 16 to 20 inches to the bottom. In middle Georgia it is not unfrequent that the operator comes in contact with gullies—they are however very easily overcome. The gully must be first filled up with rock, pine bushes or poles even with the bottom of the ditch and sufficiently up and down the gully as to go well above the ditch, and well below under the embankment. This being done, the whole should be covered with dirt, and then the embankment raised below the ditch by digging dirt from above and on the side of the gully that the water goes off on, until it is sufficiently high. It would be well to protect this part of the embankment by placing stones in it if you have them convenient. Thus the operator may go on until the ditches of the field are completed. Should stumps or trees be in the way of the ditch, it is best to take them up; but if the operator is careful he may pass them while running the ditch, by forcing the level below so as to pass without injury. Operators will find the land in better order to ditch or level, after stubble or other crop, as the surface is smoother.

The next thing is to level the field, or rather to lay off the rows horizontally or on a level. To do this, the operator will detach his grade block, and with his level and boy, return to the highest point of the field. Within a few yards of the apex or highest part, at either side or in the middle, I usually take the middle as I can better judge of the land each way—start your level, having the boy to dig the holes as before at each set of the level. If you begin in the middle of the field, you must return to the beginning place and run the other end out. That row being done you move off from that row 20 to 50 yards, being governed in the distance by the fall of the land; if very abrupt, the distance should be less, but if a very gentle declivity it may be increased. Thus you may continue on until the field is all laid off. In laying off those rows which are technically called "guide rows," no attention is paid to the ditches; whenever you approach one, cross it as if it were not there. A guide furrow or two being laid off, you may start your ploughs to bedding, and both operations may go on at the same time. Having a few guide furrows run off as above referred to, you will start on the chops of the first row, followed by your principal ploughman, and thus run out three or four of the guide rows. The ploughman then returns to the upper side of the first guide row, and with a reed or small stick in his hand as long as the width of your rows, and proceeds to run parallel thereto, regulating the width by the stick which he will very soon do with great accuracy. Thus he continues on until the land is laid out above the first guide furrow. Meanwhile another boy, with the same sort of a plough, a scooter, is following on, running first right and then left, sufficiently near to break the ground perfectly into the track of the other or first furrow. The reason for this second furrow is obvious when you reflect that a good turning plough, such as Freeborn's, No. 11¼, will turn the dirt so far over a single furrow that in returning you cannot break the ground perfectly into the first furrow run. It therefore becomes necessary that your land may be perfectly pulverized through, and especially in the centre of the bed where you intend to plant your crop. Having finished above the first guide row, the principal ploughman comes down to fill the space between that and the second. As in the case above, he starts in below the first guide furrow—followed by the other boy as before, running the second furrow always on the lower side, and runs parallel to it, governed in the distance by his stick as before, until he runs three or four furrows—governed in the number by the distance of the guide furrow below—then he shifts to the upper side of the guide furrow below, and continues to run as many furrows as were run to the one above. By this time the parallel rows will more than likely approach each other on that part of the ground that is most abrupt, and leave one or more places where the ground is more level, not laid off or filled up, as it is technically called. The balance must be filled up with short rows on that side which should seem to be the best level to the eye of the ploughman. Meanwhile the other ploughs may go on bedding up, by running the first furrow on the lower side of the row, or a furrow, run for the purpose of bedding to, and returning on the upper side of the same row or furrow and thus continuing on until one-half the middle is taken on each side. The necessity for running the first furrow on the lower side is obvious to every ploughman. It is because having an open furrow to turn the furrow slice into, the resistance that would be otherwise offered to it by turning up the hill is removed, while returning on the upper side, the plough having the advantage of turning the furrow slice down the hill is enabled to lay the dirt up much better than if it was turning up hill, without the advantage of an open furrow to receive its furrow slice. Thus the operation moves on until the field is completed, without any regard to the ditches, other than to prevent the ploughs from dragging or discharging their dirt in them as they cross them. The operator or manager may be somewhat surprised at his guide furrows, at one end or at some point in the field coming much nearer together at one point than another. This not unfrequently occurs, and always does, where the same level passes over ground that is a steep hill, and at some other point, over which it is comparatively level. In cases of this kind much judgment is to be exercised by the man that is filling up, and it not unfrequently requires the judgment of the operator or manager and some-

in the short rows, for the great object is to keep your rows as level as possible.

I am aware of the great objections that many have to the short rows that necessarily occur in the horizontal cultivation; to these objections I will reply at the proper place. It will be proper however, to make one or two remarks, showing how time may be saved in plowing those short rows, without dragging the plough from where a bunch of them may be finished in the middle of the field, if you please, to the end to begin the next row. And just here I will remark, that the crop is plowed in the same way that I have recommended for the bedding of the land, by running the first furrow on the lower side of the row, and the returning furrow on the upper side. Now to the short rows. A hand having started at the end on the row next to the one just finished, in returning on the upper side he finds a bunch of short rows above him; he however goes on until he is going back with his last furrow. When he gets to the end of the first short row he stops and ploughs it; when it is finished on arriving at its end and without stopping his horse he throws over his plough to the place from which he first turned round, and carries the furrow on until he comes to the end of another short row; he turns and ploughs that and so on until all are ploughed; he then throws his plough over as before and gains the end at his proper place.

I have now, sir, gone through with the description of the level, the manner of using it in laying off the ditches, of opening them, and the guide rows, the manner of filling up between, and the method of ploughing or bedding them, which ends the chapter on these subjects. I hope I have made myself understood; but if I have not, all that you have to do, is to interrogate me as to that particular point, point out clearly the difficulty that seems to be in the way, and I have no fears but that I can explain fully to your understanding the point that may be in doubt. I had intended in this communication to give the whys and wherefores of this system, and answer a few of the most prominent objections that are made to it as well as to point out why the various systems that are intended to approximate to this, and the system which had suggested itself to your mind, and spoken of in your letter, will not do. But I am warned by the number of pages already written, that I shall quite occupy the space that the editors can conveniently spare for one letter. In my next I will take up those subjects, when the beauty of the system will more fully appear.

With high regard,
Your most obedient servant.

R. S. HARDWICK.

Concealed buds may be started by making a niche immediately above them with a knife. This

Period of Gestation of Domestic Animals. It is often important for farmers to know the exact length of time that the different domestic animals go with their young. The following table contains the times of those which most concern him, as near as we can ascertain them;

Mare	11	months.
Jennet,	11	"
Cow	9	"
Goat	4½	"
Ewe	5	"
Sow	4	"
Bitch	2	"
Cat	8	weeks.
Rabbit	4½	"
Rat	5½	"
Mouse	4½	"
Guinea Pig	3	"

Period of Incubation of Domestic Fowls:

Swan	6	weeks.
Turkey	4	"
Goose	4	"
Duck	4	"
Pea Hen	4	"
Guinea Hen	3	"
Common Hen	3	"
Pigeon	2	"

Poison Antidotes.—For oil of vitriol, or aquafortis, give large doses of magnesia and water. or equal parts of soft soap and water. For oxalic acid give magnesia, or chalk and water. For saltpetre, give an emetic of mustard, and water, afterwards mucilages and small doses of laudanum. For opium or laudanum give an emetic of mustard and use constant motion, and if possible, the stomach pump. For arsenic, doses of magnesia are useful, but freshly prepared hydrated oxide of iron is best. If frost-bitten, take and rub with spirits of turpentine. For insects taken into the stomach, drink a small quantity of vinegar and salt. For corrosive sublimate, give the whites of eggs mixed with water, until free vomiting takes place.—*N. Y. Farmer and Mechanic.*

Lasting Effect of Guano.—There is a strange delusion affecting the minds of half the farmers in the country upon the subject of guano not doing any good to crops succeeding that to which it is applied. From a thousand other similar evidences which we have on hand, we select, says the Frederick (Md.) Herald, the following experience of Hon. James A Pearce, one of Maryland's farmers as well as statesmen. He says, "April, 1845, I applied 350 pounds of guano to an acre of growing wheat, the land being very poor. Of course it was applied as a top dressing, mixed, however, with plaster. The wheat doubled in quantity at least and fine clover succeeded it; and in two crops, one of corn and the other of small grain, last year and the present, the effects



American Cotton Planter.

MONTGOMERY, ALA.,..JANUARY, 1853.

N. B. CLOUD, M. D., EDITOR.

☞ Wm. Strickland, Bookseller, 28 Dauphin-street, Mobile, is Agent for the "American Cotton Planter,"—who will receive subscriptions and furnish the work to all subscribers in and about the city.

☞ We shall send the first number of the American Cotton Planter to each member of the Editorial fraternity of our State, and to such others out of the State as we may be able to locate, in the hope that they will find our paper, and the enterprise in which it is enlisted, worthy of their approval, and elicit from them a warm and cordial commendation to the favor of their friends. Any paper desiring to exchange, will direct to the "American Cotton Planter," Lockland, Macon county, Ala., till further notice.

Our Vignette.

It affords us pleasure to be able, much in advance of our expectation on leaving home, to introduce the American Cotton Planter, to its numerous friends with a heading so complete, so appropriate, and, at the same time, so characteristic of a cotton plantation, all of Alabama design and manufacture. The young gentleman, Mr. J. B. Alexander, who projected and engraved our Vignette, is a citizen of Mobile, a gentleman of talent and much promise,—and we hope his genius, industry and perseverance in the Arts, will soon be widely known throughout the planting States, and as liberally patronized and rewarded.

Let us but patronise and foster home genius and home industry and the certain fruit will be home wealth, home improvement and home prosperity.

☞ We would call the attention of our planting friends and others visiting Mobile to our list of Advertisements, on the last page and on our cover. Those gentlemen are prepared to supply planters with every article needed in their several departments of trade, of good quality, at fair prices, and warranted to give satisfaction.

We ask especial attention to the Agricultural department of Mr. Strickland's stock of Books. If we would have our young men enter upon the active duties of life, learned and qualified for the important work of productive industry, we must furnish our boys with practical Agricultural and Scientific books on the subject. These

County Agricultural Societies.

We would urge upon our planting friends in all sections of our State, and indeed throughout the country, the propriety, as also the necessity, of at once organizing County and neighborhood Agricultural Societies. If we would learn of others the valuable lesson of improvement, and be benefited by the experience of those who have already learned in part—we must organize. By associating our efforts for the purpose, the toil and troublesome expenditure of labor and time, with the frequent vexatious disappointments incident to the experiments and inventions of the pioneer in improvements, are greatly abridged,—and a safe point of beginning is confidently pointed out to the many, with wide-spread interest to all concerned—on this side of all these difficulties. So long as we act separate and alone, these advantages are of but rare occurrence. So it is with every valuable improvement in all the departments of our agricultural pursuits,—by associated effort, they are realized quickly and at 100 per cent. less cost than in any other way, besides the protection from imposition. But there is another important reason why we, as Alabamians, should act at once,—we have a State Agricultural Society recently organized at the Capital of our State. In its Constitution is contemplated and provided a wide and comprehensive field of action, and if the planters of our State shall come forward promptly and give it (the State Society) their co-operative influence, its good effects will be seen and felt directly in all sections of the State. Our friends will find (in another page of this number) by examining the Constitution of our State Society, that its provisions and organization are such that if it be promptly sustained by neighborhood and County Societies, as auxiliaries, it will be abundantly effective for all the objects contemplated. But it is in these primary County Societies that all this vitality and power for good lies. It is in the country, in the peaceful and quiet retreats of private life, among the industrious, persevering and public-spirited planters of the State—and their wives and daughters, our fair countrywomen—who are the active and zealous advocates always of every valuable improvement, that we are to look for the true friends, the sure patrons of the great work for which our State Society was organized.

☞ We will take occasion here in the beginning of our enterprise, to remark to our friends, one and all, who feel or take an interest in the improvements of the day, to communicate through our columns the results of any experiments, whether favorable or unfavorable, any improved methods of culture in any of our field or garden crops, or any improvement in any way, that promises good for the industry of the country. Let no man hesitate because he may think himself unable to please the fancy. The most interesting and instructing Agricultural article, is that written just as you would, around your social hearth, relate to your neighbor all the routine of management and treatment of a certain field or lot, the prosperity or failure of which may have induced the inquiry. In this way every industrious, energetic, improvement-man may become a valuable correspondent of an agri-

The American Cotton Planter.

In presenting the first number of the AMERICAN COTTON PLANTER to its friends and the friends of improvement and progress in the industrial pursuits of our State and country, it is but right and proper that we define our position in the great work upon which we propose entering. And it may not be amiss that we premise in a few brief remarks in the outset, that this enterprise had not its origin in any spirit of rivalry or competition whatever, toward the success of those most excellent Agricultural papers, the "Southern Cultivator," the "Southern Planter" or the "Soil of the South,"—nor indeed of any publication whatever, that has for its object to inform the public mind for good. We would not take a single subscriber from their long list of well earned friends, or circumscribe an inch of territory over which they have so devotedly extended the plastic hand of improvement. Our friends are their friends, and we hope never to be esteemed otherwise. The American Cotton Planter had its inception most auspiciously—during the session of the Cotton Planters' Convention, assembled last fall, with the "Georgia State Fair and Exhibition,' at Macon,—among a number of Alabama planters, who, highly delighted with the results which a few years' labor by the Southern Cultivator and its friends had exerted upon the public spirit and industrial interests of our fellow-citizens in Georgia,—determined to try the efficacy of similar means in our own State. We take our position, then, as co-laborers in the great work of reform and improvement in the industrial pursuits of our common country. Our columns will be free, as a medium of communication and information to the Agriculturist, the Manufacturer and the Mechanic, from whatever locality he may hail, to extend to his fellow crafts-men any new principle, the result of any experiment, or any means whatever that may be discovered as an abridgement of labor and a consequent increased per centage upon the industry of such pursuits,—all of which go to make up the stock of light and science of the industry of a country,—and of necessity and right, like water, is the common heritage of the people. Also the man of scientific research in all departments of Science and Art, is respectfully invited to make the American Cotton Planter the medium of communication with the industry and labor of the country. But our immediate field of labor is Alabama and the Southwest, among our Cotton Planters, Manufacturers and Mechanics.

THE PROFESSION OF AGRICULTURE.

Of all the pursuits or callings that have engaged the attention, industry or talent of mankind, this one is incomparably the most important. This fact will hardly be questioned by any one—and we may not, therefore, spend time in its further illustration. It lies at the foundation of all other pursuits, and is the support and sustenance of all human industry. And though it afford a wide and inexhaustible field—and among the most interesting presented in all nature for the man of science,—yet it has received but little aid, comparatively, from such research, till since the beginning of the present century. "Agriculture is the art of obtaining from the earth food for man and his domestic animals." This is the ordinarily received definition, and has been, and in most instances still is, a literal version of this definition. But the American Cotton Planter contemplates a new and better definition, one more philanthropic. We insist upon it,—and intend to expend our humble ability in establishing the fact,—that its scientific definition, the perfection of the Art—Is to obtain from the earth food and the elements of raiment for man, with food for his domestic animals,—and in the act improve the producibility of the earth.

The apprehension has been expressed by some of our friends, that as the name of our journal was to be "Cotton Planter," we might go too much for Cotton! This apprehension, we doubt not, is prompted by motives as pure and patriotic as ever moved the kindest chord of man's heart,—but the extreme difficulty consists here in the fallacy of the premises. We are well acquainted with the prevalent *theory!* of the country,—and we doubt not, but every cotton planter has heard it preached again and again—"that we make too much cotton—that every planter should be bound to plant but so many acres to the hand, or to make but so many bales per hand." This is a peculiarly Christmas holiday doctrine, while hoar winter has the earth locked up from cotton planting. But we believe, that in the history of cotton-growing, there is not to be found a martyr to this doctrine, or much less even a believer indeed! The impracticability of this perfectly imaginary theory, is too evident to every thinking man to require an argument of refutation here. We are gratified to remark however, that there is considerable diversity of opinion just now among cotton planters upon this very grave subject.

We have given this subject vigilant attention, in all its aspects and bearings, for the last ten or twelve years,—and we are confident that American cotton planters have not produced any too much cotton—(and we ask especial attention to this position, because we shall have occasion frequently to recur to it,)—but we are *equally confident* that American cotton planters produce too *little grain*, and consequently *too little bacon*, too *few mules*, and *no wool!* A system of policy that must be changed, else the cotton States are to become to the grain and stock States what Ireland and Irish farmers are to England and her Lords,—"hewers of wood and drawers of water!" We are aware that this is strong language, and too many of our planting friends are unable to behold the insidious effect or tendency of this disastrous policy through a crop of two or three million bales of cotton. Now, if it were a fact that our lands would not produce grain, and our climate and soil were prejudicial to pasturage, and stock could not be raised here, then the evil would be seen, felt and deplored by all. But it is the siren song of procrastination that is thus sapping the cotton States of the immense sums of gold produced annually from our cotton fields,—expended for grain, meat, mules and negro clothes! These are necessaries, without which we cannot make cotton at all. But experience, practical and successful, has and is annually demonstrating the fact, in the hands of practical men, that may be found scattered, sparsely it is true, in the various districts of our country,—that we can produce any amount of the

the year round, and none of your short nips either!—Bacon, as fat and as heavy as need be,—mules equal, fully, to the demands of our work—and wool endless, good and cheap. Why, then, is it, that our planters persist in paying out the substance of their fields and labor for grain, bacon, mules, &c., which they may and can produce to better advantage to themselves and country? Every planter with whom you have but a few moments conversation, answers this question—by "I intend at a future day to change this policy! I intend to produce more grain, raise my own stock, &c!"

In this place and at this time we cannot more than allude to a few of the disastrous consequences of this policy;—and one of not the least of its evils is, that it will certainly and inevitably impoverish the plantation whereon it is closely followed;—because it is a fixed fact, that where there is no stock raised, there will be little manure made, and where there is no manure, rich land grows poor, and poor land unproductive. And it is folly to think or even hint, the efficacy of Guano, as a cotton crop, from exhausted land after paying for bread, bacon and mules can hardly afford Guano!

But there is still another evil, and it has as yet been but little studdied, it may be termed a national evil or a disadvantage, and its enormity is such as to begin to attract attention. It is the impoverishing influence that this policy has upon the cotton States in the way of impeding the progress of substantial and permanent improvements for purposes of commercial convenience and personal comfort. We give away to others our gold, the produce of our cotton fields, the substance of our country, for grain, meat and mules,—things perishable, annuals we may almost say, that we can and should as well produce ourselves,—and in the use of them we are *strengthened only,,* to produce *more gold* from our cotton fields, *to barter off* in the same way. Now the effect of our suicidal policy is seen everywhere in the Northwest and grain and stock raising States,—villages of but yesterday are now cities, canals and rail and plank roads running in all directions, whilst the eye of the traveler is greeted on every hand, by fine mansions, beautiful and tastefully arranged grounds, fine orchards and valuable stock, and indeed every comfort that an improved taste could desire, or an accumulated wealth may procure. These remarks are not prompted by any feelings of invidious jealousy toward the provident industry of our fellow-citizens in other sections of our country,—by no means, it is not that we envy the wise and the provident abroad, but we would admonish the improvident at home. But we are improving and progressing, slowly it may be,—but how can it be otherwise with such odds against us;—and so our condition will continue, in the midst of exhausted fields, until we change this policy.

No man can comprehend the extraordinary advantages that would accrue to ourselves as planters,—to our country,—to our fields, and to our improvements in every respect, which a change of policy, in our plantation economy, would produce in the short space of ten years. We possess all the elements abundantly, that will enable us at once to accomplish this great work. $100,000,000. Does this not show us at one view the extent of our resources for improvement? Under our present system of operations what do we receive from abroad *necessary* to enable us to produce this immense sum of gold? We receive nothing, that we cannot ourselves produce and procure at home. We have iron ore and coal fields inexhaustable,—we can grow our grain and raise our meat and mules,—we can and should manufacture our negro cloth, kerseys, &c., and our cotton bagging and rope, all this we must do, and we can commence it at once—showing conclusively that we possess at home every needful appliance necessary to the production of 3,000,000 bales of cotton without the expenditure of a single dollar abroad. How changed and beautiful the scene, at the expiration of ten years?—all the necessaries of successful and improved plantation economy produced at home.—and *one thousand million of dollars retained at home*, and vested in building up our own towns and cities, and in improving our country residences and such plans and schemes of rail and plank road improvements, as the genius, industry and intelligence of our people might suggest. Under this system of policy we shall find abundant surplus means to be employed in building up

MANUFACTURES.

Yes, this is the true policy for the American cotton planter,—we should give this subject our prompt and immediate attention, and by all the means in our power, judiciously directed, we should foster and encourage the introduction of Cotton Manufacturing in the midst of our cotton fields. What intelligent and patriotic planter, looking forward to the interest and welfare of his children and the ultimate prosperity and improvement of our country, that does not perceive in the Manufacturing establishment and the Machine-shop, that sure and most valuable extension of the area of labor, that our energy and industry rapidly approximate? With the genius and boasted intelligence of our people,—and in possession of the only reliable labor under the sun,—why should we longer be satisfied to send off such immense quantities of raw cotton, to enrich and make great other people, by affording them the privilege of *putting it in a condition fit for use?* We can spin, and we can weave, as well as other people, and we can give to cotton its greatest value at home here, where it is grown. Truly in this act of simplicity, wherein do we differ from the silly African or the improvident East Indian, that roam over the sun-scorched sands of their barren country and gather the raw material of ivory,—and thus selling become poorer every year,—while the foreign manufacturer grows rich in giving form, polish and value to the tooth? This is a rude picture, but so faithful that we have been unable to resist its exhibition.

We remember well, when the cotton gin was first introduced into the neighborhood in South Carolina, where we were raised,—it was an interesting period—the industry of the country was undergoing a change from the culture of tobacco to that of cotton,—and the neighborhood *gin-house* became quite a public rendezvous—many and various, doubtless, were the *sage*, yet splenetic predic-

"Cavendish,"—who boasted themselves in worming an acre of the weed per diem,—while the skillful mechanic turned off a bale per day of the snow white staple! "Beautiful," said they, "and valuable too,—but who can afford to hire and keep a regularly apprenticed mechanic to attend it?" "And as for Sambo, it will soon cut off all his fingers," and hundreds upon hundreds of tobacco hogsheads continued to roll on to Augusta. In the mean time, however, some public-spirited planter determined to try Sambo,—and very soon his negroship was found to gin as successfully as Whitney himself. And from that day tobacco hogsheads and the tobacco inspection migrated to the Old North State.

Now it is a truism, that one thing may be done about as well as another,—and any thing that a prudent, wise will determines, can be accomplished by energy and perseverance. It is not, that we have not the labor competent to put cotton into its most valuable form for going out of the hands of the planter,—we insist upon it, as we did in the Cotton Planters' Convention, last fall,—that ours is the best labor, because the surest and safest *and always at hand*:—our difficulty then, is the want of machinery, such as to enable every planter at home, to spin with his women and small negroes the cotton produced by his fellows or effective hands, and in this way augment the value of the industry of all at least *threefold*; besides saving the commissions of the Manchester man, who fixes the price of our raw cotton abroad! With this improvement in our system of preparing our cotton for market, would looms be introduced in a rapid ratio into our country; and whatever of the surplus yarns we might find it necessary to ship to foreign looms could be done, at a saving of at least two-thirds of the present cost, from the fact that a bale of spun yarn weighing four to five hundred pounds, instead of netting us but $50 in Liverpool, as is now the case from a bale of raw cotton, it would net us $150 to $200—cost and charges just the same. Why, then, shall we longer hesitate to set about this great work? We assure our friends that the "American Cotton Planter" is in for the war! or until the project shall be clearly shown to be impracticable. Let us, as cotton planters, in solemn convention, respond at once and promptly, to the magnanimous and most patriotic proposition, extended by the Executive Committee of the Southern Central Agricultural Society to the Convention of Cotton Planters, soon to assemble in Montgomery, Alabama,—which report and proposition with the Committee's call for the assemblage of the Convention of Cotton Planters at Montgomery will be found in another page.

Now, if our position be a correct one, and its practicability adapted to the true interests of our cotton planters and the wants of the country,—then we see clearly the importance to the planting interest of the country of the

MECHANIC ARTS.

While we are entirely opposed to see or have the cotton planter dependent upon the mechanic for an ordinary hoe or axe helve, or a common plow stock, or any article of a merely *make shift* character, yet we are confident, from many years' experience, that to the planter, structed tool, in all its parts, is esteemed economy, as well as altogether essential to the satisfactory performance of his work. Within the last half-century the Mechanic Arts have rendered essential service to the profession of Agriculture,—both in the improved construction and, in many instances, the remoddling of old tools,—as also in the invention and construction of new labor-saving implements, in the use of which the industry of the husbandman is increased in value and very much of the arduous and toilsome drudgery of the farm entirely dispensed with or greatly abridged. The business of cotton planting has derived not a little of its importance among us as planters, and the extensive introduction and use of cotton as an article of apparel among mankind, from the inventive genius of the Mechanic. The invention and adaptation of the cotton gin to the use of the planter—and also of the spinning jenny and the loom, has given an importance to cotton planting that it could never otherwise have possessed. We are still looking forward to improvements wherein we hope and expect as cotton planters, to be benefited, for any or all of which we shall be brought under renewed obligations to mechanical genius and art. We cannot then, too highly appreciate the Mechanic Arts, blended as they are, so intimately with our interest in all the pursuits of life. Indeed, the cheerful tap of the Mechanic's hammer, may be well styled the time-piece of industry.

☞ OUR FIRST NUMBER has been gotten out hastily and much in advance of the time at which the volume is to commence, as a specimen of what the work is to be, both in its mechanical execution and the interests that it is to advocate. We have been compelled to have this number published in the City of Mobile, but in due time our second or February number will be issued entire on a single sheet, from a new Power Press, for the express purpose, at Montgomery. In this number and in the first article we give our readers a complete, well-written and interesting history of the Cotton Plant by a citizen of our State, as read before the Historical Society of Alabama. We hope its apparent length will deter none of our friends from the interest and information, which its careful perusal will afford. We have on hand several interesting articles on practical subjects, and among them one from our friend, Dr. W. S. PRICE, of Marengo, on a new mode of clearing and retaining the original fertility of our forest lands, which we shall give in the February number, when we shall commence the practical and manipulatory operations of the routine of plantation economy.

☞ Our readers will doubtless be gratified with the stand taken by our well-tried Agricultural friend, Dr. M. W. PHILLIPS, of Mississippi, in the position which he assumes in regard to the importance of diversifying our plantation labor.

We also ask the especial attention of our readers to several original communications—with our correspondent's Review and Cotton Statement of the Mobile Market. Our planting friends will perceive, that our staple production, Cotton, is likely to afford us remunerating

[For the American Cotton Planter.]

Plantation Economy—No. 1.

EDWARDS, Miss., June, 1852.

DR. N. B. CLOUD.

Dear Sir:—When we look around us, upon the extent of goodly soil, upon a favorable climate and reflect upon the energy and talent of our fellow-citizens with whom we have been born, educated and lived,—for whom we (I mean, you and myself,) have written so much, it is but reasonable to suppose we are amazed that our loved countrymen will continue to be dependent.

Judging of the slave States, of the Cotton region, by the portions I know, (and through nearly every portion I have journeyed and mingled with their citizens,) I am indeed lost in wonder, that so little has been done. Taking Mississippi for my starting point, knowing its resources, its people better than any other, I will attempt to show, that we can and ought to vary our labors, and that in so doing, we would be more independent, comfortable, happy, and, in the end, be richer and wiser. To many this is a hackneyed subject. But this should not deter us. We know that the greatest good ever bequeathed to our race is and has ever been to some a hackneyed theme, I need not refer to it, in this connection, yet I cannot refrain from saying, that the superlative blessings received and acknowledged by all christendom is that one most holy cause.

Next to that one most blessed cause, for I include the improvement of the head and heart in it—is this one subject—improved agriculture. Many of your readers, well know, that I am and have been for some 20 years a public and private advocate for a varied husbandry. Do we not see, from the history of poor, downtrodden, dear and loved Ireland, "the home of our fathers," what the one-crop system has produced? If not, please cross over to the Continent, and see the granary of England and much of Europe, around the Black sea and elsewhere. We can see the mining districts, and, in short, any and all others where the one-crop system prevails, and only to see poverty, want, suffering. Look at the following picture:

CALIFORNIA.—It is a fact, though by no means a singular one, that while California has already supplied $160,000,000 to the circulation of the world, she herself has retained not more than $8,000,000 for home circulation. At the same time, money commands 3, 4 and 5 per cent. per month. The main cause is evident enough. Everything that California has, comes from abroad. Her agriculture is in its infancy, and she has no manufactures. For necessary articles, she can only give in exchange that which she has and at present she has nothing but gold. The time will change.

Whereas go to the farm house and we will find comfort, ease, luxury; well clad, intelligent, educated youth. Go to sections, counties, counties where such a system prevails, and we see opulence almost at every corner. Where is the travelling man who cannot respond? Who has not seen herds of cattle, where 50 or 500 cows, I might say, roam at full liberty and the owner without milk, butter, or almost a comfort. Shall this continue, that property may abound! Common sense forbid it.

In Alabama, in Georgia, here, elsewhere, what prevents our varying more or less our labor, so as to enmany who doubt the utility; a few facts will suffice for this my first, in your first, to be followed, I trust, with others.

A Mr. W., living in this county, (Hinds,) made in 1851, two thousand dollars clear of all expense, with six or seven hands, having for sale only corn and hogs. He is a native of Kentucky; and a relative of his informs me that he says, he regards this county as better for this mode of farming than even Kentucky. So much, so fully is he convinced of this, that he has this year all his land in corn and grain, even plowing up 25 acres which he had planted in cotton. And yet corn is in more abundance at this date than I have known for 20 years. Again: I have reared sheep on this place for 18 or 19 years, at no time has it been needful to feed sheep; this year I have sold my entire clip at 20 cents in the dirt. My sheep are all improved, it is true. Year-old wethers were selling last week in Jackson, of say 60 lbs. at $2 75. But put price of wool at 15 cents, clip only 3 lbs. and a yearling at $2, and we have $2 45 from an ewe per year, or an interest of 100 per cent. This is a rough estimate.

Again: I have threshed 24 bushels of seed oats per acre, with, I am sure, full 6 bushels lost from want of a thresher, and cutting a little too late,—but at market price 75 cents—$18 per acre. I have threshed barley 20 bushels per acre, at price I paid, $1 50, $30 per acre, or at $1 per bushel, we have $20. And yet again. Shingles are brought down the Mississippi river for sale, whilst two good hands can, I think, average 1000 per day the year round, Sundays, of course, excepted; but say 300 days, and at only $3 per thousand, and we have $450 per hand—but admit only five thousand per week and for 50 weeks only $375 each, quite comfortable in a small way.

But look yet further. And leave to us only mules and at 2 years old, rising 2, at only $70 each, and what will prevent us from turning out $30 per year from each mare, with her use to make corn and other work, where again, hogs, cattle, sheep, &c., are reared? Are these things facts or not? We may be told that unless we buy we cannot sell; but to this I reply, that the more we make at home, the more we can dispose of, and the better able are we to pay remunerating prices to others. Could it be possible for the cotton region to make corn, one-third of the wool, mules, horses, all of our meat, bread and hay, we would soon find, in my humble opinion, more thrift every where. True, we would not sell much cotton *perhaps*, but we would buy more than we now do of the luxuries; we would have better buildings; and employ more of our race in profitable labor. But I am not sure, that we would make so much less cotton, therefore I say "*perhaps*." And why? Because our fields would not be worn down with the incessant labor of producing cotton. I do not see why it should not be, that the human laborer if well-fed, well-housed, well-provided for in all respects should be able to do more work, and yet our land treated thus would fail in doing likewise. We all know that land pastured by sheep will improve. We know that rotation and rest improves it. We know that by husbanding our manure,

No. 2.

EDWARDS, Miss., June, 1852.

DR. N. B. CLOUD.

Dear Sir:—In pursuing the same train of thought as in my first article, I would not desire to be understood as desiring to discard cotton from any plantation or farm, but that I would have every plantation to grow more than one article for sale.

Admit that I had 400 acres in cultivation and had 30 hands, requiring 200 bales or rather packages, (for we here mean 400 lbs. to a bale,) which at 8 cents, perhaps averaging 450 lbs., say $7,200 gross income. Estimate now, let any man dare, what with such a crop, would be the annual expense as now, for mules, meat and ordinary farm improvements. And then look at the other side of the picture. Suppose we all attempt to make 180 bales at 8 cents, or $5,760, but I risk here the advantage in handling 180 bales against 222. With such a crop, the planter can with care make corn, oats and pork for home, and some to spare. He could rear three or four mule colts per year. He could raise wool enough to clothe in the winter at least. He could improve by pasturage, by manure, by rotation say only five per centum per year, and he could have his hands at times to get out timber and do largely all his own improvements. I speak what I know, for even now I have already cut down and hewn in the woods, cut down, sawed, riven and drawn shingles, hauled up and assisted to rear with field hands more than 2 hands can make cotton to hire a northern man to do.

Do we not see almost daily a stout hand working in the cotton field to make $100 or even admit $200 clear, and hire a man to do work at $600 per year, when the above hand could do much of that work?

We are at this moment paying $18 to $20 per barrel for pork, say $9 to $10 per hundred, when we can to a certainty cultivate 30 acres of corn per hand, which at only 20 bushels, will make 600 bushels of corn, to feed hogs, and with our advantages of climate, we can certainly make and sell at a profit of 4 cents per pound for pork.

Are we to lose all advantages of our climate? Having for years practised it, I know we can feed our hogs on our cotton field from 1st December to 1st April, by sowing in the fields oats, rye, or barley. Last fall I had about 80 acres in oats, the fields have now crops of corn and cotton on them. Our meat hogs can be fatted entire on the pea field, but better to corn for 10 days before killing. Thus can we from an oats field say 1st of June, keep all hogs until 1st of October, then gather a part of corn, and turn in *meat hogs*, rearing with hogs in oats field until one field of cotton can be spared for stock hogs to graze on the oats. But is this all? Where are sweet potatoes? Where orchards for pigs? And where a rich permanent pasture well stocked with some grass?

And yet in all this economy we have not noticed the gain to be derived from deep and thorough tilth, which we can alone command by mixed husbandry.

We have not noticed the time we would have to circle our lands and thus prevent waste. Nor has anything been to systematize, preparing manure, from a well fed and a full stock.

The gain to the farmer from so pitching his crop that he is not by necessity bound down to the one crop, is far greater than can be supposed by those who have had no experience. Which can be readily shown here,—for instance, three years ago, I manured for experiment one acre of land, from it I have taken one crop of corn, two of cotton and but *now* one of oats. The oats immediately adjacent not a furrow separating was not either as heavy, nor by measure anything like that of the manured portion, a difference of at least 10 bushels per acre. On another small spot manured in 1841 or 1842, crops taken from it yearly, at this writing there are weeds of a luxuriant growth and the crops are double of the adjoining, where the weeds are puny and sickly green. Can further illustration be needed? The difficulty is not, in ignorance of the right, but in the fact that there is a prejudice existing against encroachments on "the will and the way" of the elder planters. We must make a systematic attack upon the practices of the past, encourage reading, experiments, patronize agricultural associations, and they in their turn encourage an enlarged improvement in turn, of premiums for one acre, one hog, &c., which only show the possible and not the practicable. We must have an agricultural bureau, and from thence send floods of light, that the nations of the earth may be immured therein, renovated and come forth with revivified principles, have the good of man at heart.

The mere culture of the hog has more in it than is dreamed of in many men's philosophy. Why should we rely upon the corn crib, when time and times again, it has been demonstrated that pasture, succulent food, abundance of good water, proper crosses will do as much, if not more. And likewise is it proven, that a few feet of sheet iron and plank, with a few nails, will make a boiler, where ground food well cooked will pay a good interest, or all expense and for hire of hand. Admitting more rapid improvement, why not use the cooked food, but when a saving of only 10 per cent. clear, it seemeth that good sense would say "try it." Who fattens their swine protected from the weather, mud and filth? This is "book farming" which is about as great a scare-crow, as change in old religious creeds and dogmas, the man who advises must expect "anathema maranatha" from all the intolerant.

Yours, with all due respect,

M. W. PHILIPS.

DEAL GENTLY with those who stray. Draw them back by love and persuasion. A kiss is worth a thousand kicks. A kind word is more valuable to the lost than a mine of gold. Think of this and be on your guard, ye who would chase to the grave an erring brother or sister.

A VALUABLE CEMENT FOR HOUSEHOLD USE.—Take new milk, half-a-pint, and curdle with sharp vinedar; separate the whey and mix with the curd, the whites of five eggs, beat well; add fine quicklime, and mix till you have a ductile paste or putty. It will stop craks, and is

[For the American Cotton Planter.]

Letter from Dr. N. B. Powell.

CHUNKENUGGEE, 5th July, 1852.

DR. N. B. CLOUD.

Dear Sir:—Your very interesting communication of the 15th ult. is now before me, and should have been attended to at an earlier period, but for bodily affliction; for I am not so highly favored, as that good old man of old was, whose "natural force had not abated; his eye was not dim, nor his ear heavy," even when he had numbered one hundred and twenty years. How enviable a situation; I often think how happy the old man (Moses) must have been. Though a little over half that age, I am continually admonished by the failure of my decaying faculties and powers, that my days upon earth are but few, and that my sun is rapidly approaching the horizon; yet my zeal to promote the good of my fellow-man, and the independence and prosperity of my country, has not abated, and in the retrospection of the past, I have much cause to regret that my time and talents had not been earlier devoted to the noble objects that now animate my bosom—that when called hence some memento or memorial would bear testimony that I had not lived in vain, but should be ranked among the benefactors of the age. This now is my highest ambition, and to lend my feeble aid in promoting your enterprize will be my greatest pleasure; and with Dr. Phillips, I wish Montgomery may send you up twenty-five hundred subscribers. I subscribed my name to the prospectus sent me, and had it posted up at Judge Pullum's store, hoping others will follow the example and soon afford you a patronage commensurate with the noble cause in which you have embarked. I will make known your request to the Secretary of our Horticultural Society, who will I doubt not, furnish the information you require.

In relation to the growing crop, the prospect with us is far from being flattering. The excessive rains in the early part of June literally ruined both corn and cotton upon our sloughs and bottom lands, my farm never sustained so great an injury. I am certain I shall not make more than the half of an ordinary crop, especially of cotton. This I am aware, is not a general thing. As much of my farm is slough land subject to innundation, still, as far as my observation goes, I feel assured the cotton crop was never more unpromising at this season of the year.

Our oat crop has been greatly damaged by the late storm and heavy rains; I fear seed will be scarce in this region. Our gardens have been fine. Such cabbages and potatoes we never raised before, the latter were not only large, but like the potato grown in the mountains of old Virginia they were mealy and delicious. Through the medium of your journal Mrs. P. can afford your readers some valuable information in relation to the quality and cultivation of the Irish pototo.

Wishing you great success in your undertaking. I am your fellow-citizen. N. B. POWELL.

[The above is from an esteemed friend and gentleman well and widely known in eastern Alabama and western Georgia as an energetic, practical and thoroughgoing full of public-spirited patronage towards every enterprize that has for its object the inseparable good of the country and its industry. This old gentleman, in the enjoyment of the earthly fruits, with which a kind Providence has so profusely rewarded his industry, energy and perseverance now awaits with noble christian patience, full ripe, in half the years of Moses, to be gathered home to his fathers,—with but a single ripple of regret upon the ocean of retrospect—and that, how patriotic? "That my time and talents had not been *earlier* devoted to the noble objects that now animate my bosom." The members of the Cotton Planters' Convention, assembled at Macon, Ga., last October, there learned some of the objects that now animate the bosom of this patriotic old gentleman of Alabama. "Home Industry and Home Improvement of Home Industry," when the horn of plenty will ever characterise the Cotton Planter's home. Here is a noble lesson for our young men, who are just entering upon the maiden soil of our Southwestern country, with the energy and industry of youth and, in most stances, with ample means and well educated,—to engage in the pursuits of agriculture;—whilst by your labor, diligent attention to business and economy, you shall have grown rich from your plantation,—see to it that at last you may not have to regret an impoverished farm with dilapidated improvements, which in old age are illy adapted to provoke or stimulate a noble impulse in any good or patriotic enterprise of improvement. Let every young planter in the cotton States commence now, and devote his youth, energy and influence to promote the great and noble work of reform and improvement in the plantation economy of our country.

We shall ever take great pleasure in opening our columns to any valuable information from the pen and experience of Mrs. Powell, and also to any others of our fair countrywomen, to whom we look as the star of hope to cheer on our young planters to noble deeds of improvement.—EDITOR AM. COTTON PLANTER.]

[For the American Cotton Planter.]

Rail Roads.

It cannot be denied that the Steam Engine has a social, moral and political, as well as a potent physical energy. Some one has called it a great working democrat. Truly it may be said to labor for the amelioration of the masses. In the immense reduction which it has effected in the cost of many of the leading necessaries and comforts of civilized life,—in relieving toil, through its thousand afflictions, of much of its most monotonous and oppressive drudgery,—in cheapening, expediting and facilitating social intercourse, it has probably effected more than even the art of printing in advancing the welfare of the major portion of the human family. Modern science has discovered the fulcrum which Archimedes wished for in vain, but applies it to a nobler purpose than the movement of inert matter. It lifts not the globe, but the people. Indeed, this is the proud distinctive feature of modern civilization. Art is no longer the slave of kings and favored classes—it is the servant of

it has evoked for the service of the millions, it has erected a lever whose movement is shaking the foundations of the throne and the castle.

In America where there is no antagonistic influence to be weighed down by this element of popular progress the tendency can only be harmonious, elevating and conservative. The greatest triumphs of the Steam Engine have been and are yet to be in the hands of this young people,—vigorous, free, inventive and indefatigable.

Of all the purposes to which steam has been applied, there is no one more striking in its effects than its use as an agent of locomotion. It is upon the Rail Road that steam exhibits itself not merely as a friend of man in the reduction of the moneyed cost of travel, but as an economist of time, or in other words life itself. Let us attempt an approximate estimate of the gain on this score by the introduction of Railroads.

Estimating the whole number of miles of Railroad now completed in the world at 24,000, equal to the circuit of the globe, and 200,000 annual passengers for every 100 miles, and we have 48 millions of people, moved say an average of 50 miles in the course of a year. This would require about two hours to each individual, or 96 million of hours. Before the introduction of Railroads, this distance would have occupied say 8 hours to each person, or 384 million of hours. The saving therefore in time would amount to 288 million of hours, or 12 million of days, or three thousand two hundred and eighty-five years! This in less than two years would equal the period which has elapsed since the creation of man, by the Mosaic record.

Taking the useful period of life of each passenger at 20 years and we have a gain for that period equal to 3,280 lives principally among the most valuable and productive classes. Let it not be said that this is subject to deduction for loss of life incident to this mode of conveyance, for it is well established that no mode of transportation has ever been devised safer to the traveller than the Railroad. According to the semi-annual returns recently made of the 6,800 miles of Railway in operation in England, the number of passengers transported during the past six months was 47,509,392. Equal to nearly 700,000 for every 100 miles, or 1,400,000 for every 100 miles during the year. The total number of persons killed was 113, or one in every 420,000. Upon the Continent of Europe, where there is some 8000 miles of Railroad in operation, the number of passengers transported is about the same as in England, with about the same proportion of accidental deaths.

If we attempt to estimate the gain to the world effected by Railroads in the reduction of cost of travel and the inland carriage of raw produce and merchandise the result is equally remarkable. In the first place, the 48,000,000 of passengers moved 50 miles, would be 2400 millions moved one mile. Say this is effected at a reduced expense compared with the former modes of land conveyance of 2 cents a mile. This would give 48 millions of dollars. Say that the 12 million of days saved in time is worth but $1 50 per day to the travelling community, would [illegible] million of dollars annually, the value of the saving in time to passengers equal to sixty-six million of dollars annually.

Taking the average price of wagon transportation at 40 cents per 100 lbs. per 100 miles, it is eight dollars per ton of 2000 lbs., or 8 cents per ton per mile. On an average the cost of Railroad transportation does not probably exceed 2½ cents per ton per mile, but we will place it at 3 cents or ⅜ of the wagon charge. It is near enough for our purposes to say that the gross receipts of the Railroads from freight and passengers are the same. The 48 million of passengers moved 50 miles at 3 cents a mile would amount to 72 million of dollars. Adding for freight the same, we should have 144 million gross receipts, which after deducting expenses, 45 per cent., would leave 80 million net income, or 4 per cent. on the estimated cost of all the Railroads in the world, two thousand million of dollars. Now taking the receipts from freight as representing but ⅜ of the expense which would be sustained in the absence of Railroads, and we have a saving effected in the carriage of freight amounting to 120 million of dollars. This would make the aggregate moneyed saving on freight and passengers equal to 188 million of dollars.

If in addition to this, it were possible to ascertain the saving due to the more rapid transit by Railroads, in interest on the value of produce and merchandise transported in the course of a year, with the effect which such unrivalled expedition, certainty, safety and cheapness of carriage and inter-communication has in stimulating and enhancing the profits of labor, in opening new paths to capital and enterprise, the gain to the value of real estate and to the products of the forest, mines, manufactures, &c., we should have an aggregate which would be absolutely startling. It may be thought, at first view, unfair that we should take wagon transportation as a basis of comparison in the foregoing estimate, inasmuch as Railroads have to some extent entered into competition with marine, river and canal navigation. Yet it is probable that the important item of *insurance* which is saved in Railroad carriage, will more than cover any difference in the estimate justly chargeable on this account.

The saving of insurance on all the more valuable descriptions of merchandise will, in many instances, more than pay the entire cost of Railroad freight.

Undoubtedly one important consequence of Railroads has not been sufficiently regarded. This is in curtailing the extent of coastwise intercourse by navigation. For instance, when our great lines of Railroads from the city of New York to the Gulf of Mexico and the Mississippi river at Memphis and Vicksburg shall be completed, an immense amount of merchandise which now reaches the interior of the South and Southwest, by marine and river navigation, will then come directly to the point of destination by Railroad.

So also when the Mobile and Ohio Railroad is completed, much of the coastwise shipment from New Orleans to Mobile of Western produce, will be superseded—and the planters on the route of that road will not, as at present, draw their supplies of bagging, rope, bacon, &c., from the sea port, but directly from the point of produc-

augmented by this work, and the prosperity of the city cannot fail to be enhanced to an extraordinary extent.

Our Railroads have already added immensely to the value of the Southern portion of the Union. It cannot be questioned that they have fully realized public expectation in regard to their advantages—and more than equalled the estimates of the most sanguine in regard to the extent of business and traffic which they have secured and accommodated.

At a future time, we propose to investigate the extent, cost, condition, prospects and economy of Southern Railroads.

A. A. DEXTER,
Civil Engineer.

Cross Keys, Ala., July 3d, 1852.

[For the American Cotton Planter.]

Letter from Daniel Pratt, Esq.

Prattville, Ala., July 7th, 1852.

Dr. N. B. Cloud—

Dear Sir: I understand the first number of the American Cotton Planter will be issued in the course of a few weeks. I feel a deep interest in its success and wish that I was able to contribute to its usefulness. All I can do, however, is to send you the names of a few subscribers, which you will find enclosed. I am not a Cotton Planter, notwithstanding I am deeply interested in its cultivation. It is from this Plant that I have been enabled to support myself and family, and to give employment to a good number of persons, who I hope are benefitted thereby. Is it not important to have our country supplied with good mechanics of various branches? If so, how can it be done? I answer by having our lands well cultivated, not worn out as the custom has been, but to improve them. If a Planter discovers his soil is becoming more productive, he will not think of leaving it to go in pursuit of fresh lands. He will become satisfied he can do as well where he is as to move to a new country. If he considers himself settled he will want a good dwelling house, good negro houses, barns, stables, gin house, &c. He will want a good school house and Church in his neighborhood. How is he to obtain them? If he wants good houses—which he most assuredly will—he will seek for good Mechanics to build them. He may at first have to go abroad for them, but so soon as there is a demand for good mechanics, we shall raise them up amongst us. We shall not only be able to build good houses, but we will have Machinists, Engineers, Manufacturers, and persons suitable to carry on every branch of mechanical business which we need. All this and much more will result from improving our lands. Every branch of business is dependant on the culture of our soil. I think it will appear evident to every reflecting person, that if we at the South can get on some plan for improving our lands, our Planters will consider themselves settled, and of course have every thing comfortable and pleasant around them. Our society will be vastly improved, our population more dense. When this takes place, every year there will be surplus capital to invest. In what way will it most likely be invested? neighborhoods? Will we not have manufacturing villages where we can get better articles than we are in the habit of procuring from the North? I think so. On the other hand should our agricultural community pay no more attention to the improvement of their lands than they have formerly done, instead of our population becoming more dense, it will become more sparse, and much of our good land will be abandoned as worthless. If what I have stated is correct, is it not of the greatest importance that our attention should be directed to this subject? The first step to be taken is to stir up the minds of the people to it, and what is better calculated for the purpose, than such a work as you are getting up. It is a Southern work adapted to our Southern soil and climate, and I hope it will be patronized by every Southern Planter and Mechanic. It is a work in which every person who has made some valuable discovery or improvement can communicate it to the public. This will not only benefit the community but will be a source of pleasure to the person who communicates it. For what do we live? Is it to hoard up silver and gold? Is it to say we have a plantation of one or five hundred negroes, or that we make 1000 bales of Cotton? Is it to slave ourselves to accumulate property, and not enjoy it? Have no comfortable house to live in ourselves, or for our negroes, or stables or barns for our stock—to have no roads that we can pass safely over to visit our neighbors? It is the desire of every person to be happy, but they are many of us who do not pursue the right course to obtain happiness. Permanent happiness consists in something more than this world's goods, but I do think our temporal and spiritual happiness are so blended that it is difficult to separate them. I think we can take more satisfaction in worshipping God in a good comfortable house, suitable for the worship of such a Being, than we can in a log cabin, where there is but little to protect us from the cold wind and inclement weather. When we have finished our days labor we can see more satisfaction in a good, well ventilated house, with good furniture, than we can in a little pent-up log cabin with stools, or chairs but little better, to sit on, and other furniture corresponding. I care not how industrious a man is, or how hard he may labor, so he enjoys the fruits of it. What I call enjoying the fruits of labor is this:—When we retire from it to have things comfortable around us—say a good house, our table well supplied with the rich products of our soil, and above all, a good appetite to partake of them. This we shall be almost sure to have if we, as we are commanded "live by the sweat of our brow." Daniel Webster has remarked, that "People now have the privilege of living a long life in a short space of time." I think that we have the means of gaining more knowledge in one year and relishing greater enjoyments, than those who lived a century back had in ten. Can we not still improve and carry it to fifteen? I think so. In my opinion the most important step towards it is to encourage agricultural improvements, the balance will follow. From what I have written, you will discover my views as to our duty to our Creator, ourselves and our fellow beings.

[For the American Cotton Planter.]

Architecture.

Dr. N. B. Cloud—

Architecture, like geometry and mathematics, has its leading and fundamental principles—principles abstract and eternal—principles that are and would be, if the universe of matter were swept into one wide chaos.

In the application of these principles, variations may and will occur, according to the circumstances under which the expressions are made: yet this should never induce the student or patron of Architecture to imagine for a moment that Architecture was the mere accidental creation of conventional influences.

In the early periods of society, as far back as any authentic history conducts us; we find music, painting, poetry and architecture struggling with the rudeness of untutored generations—for a place in the circle of social utilities; and as age succeeded age, with their experimental lights, gradual developements bequeathed to the world sciences that are as truthful in their applicability, as essential to the happiness and well being of society.—Euclid, in his complete system of Geometry, did not build up his theory of materials crude from the quarry: much had been practised long anterior to his days: but it was the systemising of these first and incidental disclosures, that led this profound thinker through the intricacies of a thousand problems, not one of which but is essential to the truth and harmony of the whole.

Over two thousand years, the geometry of Euclid has been in the hands of every variety of learning and labor. By it, man has acquired a degree of omnipotence that is startling to contemplation. Yet with all the advantages that this science has secured to the generations of man, there has not been aught essential added or diminished.

All this is equally true of Architecture. It is no fancied interest to uphold the dogma—that the attainments of excellence in our public and private edifices and general style of building depend upon a discriminating adaptation of the forms and arrangements of antiquity. With as much propriety might we anticipate new elements in the triangle, by which to determine the distance of Mars and Jupiter, as to look for anything new and essential in the art of orders. What if indifference has for tedious periods rendered nugatory the triumphs of art! Shall we therefore throw away the treasures of antiquity and retain but the rudiments of architecture? Indifference may be, and is chargeable upon our nation—the South in particular: but is not this indifference to be traced to the ignorance of those claiming to be its teachers?

Euclid was not of our age—nor nation: neither were the perfections of Architecture—shall we lay them aside or pervert them? Surely not.

National pride is justly a noble passion. Is there nothing in the art of architectural illumination to gratify this noble passion; though it were of Greek and Roman origin? What if none of its characteristics were determined by the peculiarities of our climate and habits? Is there nothing still of which we may be proud? The selfishness of a Westminster Quarterly may answer this question, no. But we think this art is to contribute as our people by the expression of their sentiments and character. Show me your general style of architectural developements, and I will from thence determine the taste and habits of the incumbents. Then to a rational progression in the illumination of the art, men must be fitted by education for these great interests. Music, painting, dancing, fencing, oratory—all have their professors. Corporations and communities are liberal patrons of all these refinements, but where is the school to teach the art of fit expression to give to every building a definite character? A dwelling should not indicate a bank—nor a bank a state house. A stable should not resemble the residence of man, nor a church a barn, neither should a barn be ornamented with battlements and gothic windows. Truth is so beautiful, it cannot be dispensed with either in art or morals.

Architecture, is an ornamental art—its ornaments when rightly understood in their appropriate orders, find a counterpart in the feelings of society, and therefore of practical utility.

The most elaborate ornaments can never be pleasing if there is not perfect symmetry in the proportions, and harmony in the adjustment of parts to each other, and these parts to the whole.

By study and practice any ordinary man may become a good builder: but more than the mere manuel of a trade is essential to a complete architect. Architects of old were on a level in their dignities with the most exalted in earthly honors. Royal birth and noble parentage were the hereditary incumbents of this noble art. This shows at least the estimation the profession was held in. Is there any reason now why we should not (a race of Nobles, born to freedom of privileges, unknown to Greek and Roman rights) have opened in Alabama schools of art where genius might be ripened in its particular tendencies to usefulness and glory? Shall incapacity be a fit object for corporate benevolence—Insanity the nursling of State guaranties—and genius, that sacred fire transmitted from God for man's good—be doomed by the votaries of mammon to plod impoverished? Surely not. It was supposed by some sagacious friends of the Mechanics Institute of Mobile, that out of this organization a plan would be perfected that would ultimately secure to the patrons of the beautiful and true, facilities to fan the fires of genius in our midst and thereby project at home our mansions—adorn our walls with glowing landscapes—and our parlor tables with

"Thoughts that breath and words that burn."

Are we but half awake? The South—Alabama—is destined to wealth and opulence. Can her wealth secure the high ends of society, if art is left to languish? To give practical effect to architecture, utility must be consulted. Who but the ingenious, practical thinker, can grasp these high ends! Such is the state of society around us, that the most brilliant capacities for artistic accomplishments feel but little inclination to the culture of powers that would have no patronage. If genius is to work to live, instead of live to work—then it is deemed no great sacrifice to pursue that calling which yields most readily a living—hence we are a mere plodding people—not one step advanced by the agencies to progress so

Art is not sought for its own sake, for the sake of its eternal worth—hence we remain narrow, poor, and incapable, for want of that broad culture and experience through which, alone, men grow to real manhood: and if we have not men, where shall we find art, to meet the wants even of our half civilization? Could we but realize life as a duty—and genius a commission which is to be sent through the world in honor of the great Giver of every perfect gift, and to cheer and enliven the wayfarers of this transient earth: we should not long witness the dull apathy that laughs to scorn the earnestness of our faith in the power and perfection of beauty. If man be a transcript of the Eternal, shall he not emulate in the works of his hands, the beauty, order, utility and power everywhere displayed so magestically in the wide field of experiment before him?

Mensuration, geometry, trigonometry and algebra are requisite to a complete architect, and how are these appliances to be rendered available if society seeks in its established process no higher attainments than that which is reached alone by physical force! Would a school supported by the State expressly for the education of apt and ingenious youth in mechanical philosophy be a revenue or a profitless expenditure? This is a question to be discussed, and we hope that there are minds awakened to its importance, which will come timely to the rescue of mental resources that now lie deep immured in the gulph of our cupidity and avarice.

THOS. S. JAMES.

From an old volume of the Cultivator.

Farm Embellishments—Buildings—Fences.

There are comparatively few of our farmers, who could afford to be at any considerable expense for rural embellishments alone; but we think there are many, who would do more in this way than they now do, if convinced there was an actual profit in such expenditures, and that by improving the appearance of their farms, they were adding to their positive value and increasing their own means of comfort. The man who spends a few days in planting fruit and ornamental trees, is adding decidedly to the permanent value of his farm, as well as improving its beauty. The man who spends a few days, and perhaps dollars, in painting or coloring his barns, out buildings and fences near his dwelling, is very far from throwing away his time, or losing money by the operation. However slovenly and unthrifty a man may be himself, he is always pleased with a neat, well-managed place; and were he to be a purchaser, would always prefer paying well for such improvements, rather than have them wanting. The most careless observer is struck with the wide difference there is between two farms, on one of which all the buildings, gates, fences, &c., are just as they should be, all in good order and perfect repair; and another, where all is the reverse, nothing in its place, and nothing as it should be, and instinctively prefers the former. We do not advise our any case; the times demand economy and retrenchment; but we should be gratified to see more attention given to rural embelishments, particularly where it can be done with little expense other than the time and labor of the farmer himself.

Experiments abundantly prove that whitewashing, or otherwise coloring out buildings, fences, or wood work of any kind exposed to the air, has a powerful tendency to preserve it from premature decay; and certainly does much to improve the appearance of the farm on which such operations are performed. White wash, colored at the pleasure of the farmer, laid on once in three or four years, is one of the best preservatives of picket or board fences yet discovered; quite as good as the ordinary oil painting sometimes adopted. For the benefit of those who are willing to make improvements of this kind, we give the following methods, selecting from a great number, as they may be depended on for good results, and are cheap and easy in their preparation:

Recipe No. 1.—Take two quarts of skimmed milk; two ounces of fresh slacked lime; two lbs. of whiting; and the same proportions for any larger quantity Put the lime into a stone vessel, pour upon it a sufficient quantity of milk to make a mixture resembling cream, then add the remainder of the milk. When this is done, crumble and spread the whiting on the surface of the fluid, in which it will gradually sink. It must then be well stirred or ground as any other paint. By the addition of any coloring matter you may make it suit your fancy. It must be put on with a paint brush, and when dry, a second coat should be given. The quantity named is sufficient for twenty-five or thirty square feet.

No. 2.—To make a fine stucco white wash. Take clean lumps of well burnt stone lime, (oyster-shell lime will do as well,) a half bushel; slack the lime with hot water, (in a half barrel or large tub) covered with a blanket to keep in the steam, and then sift through a fine sive; (this sifting is quite unnecessary for ordinary purposes,) add one lb. Spanish whiting, (well pulverized,) two lbs. sugar, five lbs. rice flour, made into a thin and well boiled paste; one lb. light colored glue, dissolved by simmering over a slow fire (as cabinet makers do.) The lime is the basis of the wash—add to the whole thus prepared five gallons warm water. It must be laid on with a brush and while warm.

No. 3.—Take one bushel of unslacked lime, (Thomaston lime is the best,) and slack it with cold water; when slacked add to it 20 lbs. of Spanish whiting, (pulverised,) 17 lbs. of (clean) salt and 12 lbs. sugar; strain this mixture through a wire seive and it will be fit for use after reducing it with ten gallons of cold water. This is intended for the outside of buildings or where it is exposed to the weather, plank fences, pailings,

three on brick. A white wash brush may be used for laying it on, and each coat must be dried before the next is applied. This may be made any color you please. For straw color, instead of the whiting, use yellow ochre;—for lemon color, ochre and crome yellow;—for lead or slate color, lampblack;—for blue, indigo; or for green, crome green.

There is one difficulty frequently attending the use of white wash, and that is, it comes off in flakes, or the coats separate from each other or from the wood. This is occasioned by its being put on two thick, which should be strictly guarded against. The wood is affected by the alkali of the lime, and the first coat should have more reference to this fact, than to the color. When wooden out-buildings, fences, &c., are protected in this way, their durability is greatly increased and an air of neatness and comfort, worthy of the farmer's attention, secured.

[In the above extract, from an old volume of the Cultivator, (Albany,) we give three recipes for making white wash; the first is more properly adapted to the use of ladies in white washing about the fire place, &c., and is admirably adapted to the purpose. The second, is one of superior merit—and produces a finish on inside work in rooms or passages almost as fine as paint, and does not rub off, and retains its brilliancy for years. It is fine for inside work, but more expensive than the third, which is simple and of great durability for outside work, which is the result of the experience of our Agricultural friend, Solon Robinson, Editor of the Plow. We have used white wash made after these recipes, and can confidently recommend them as superior to any other combination that we have seen or used. And we doubt not, on our Southern cotton plantations, but that, besides an air of neatness and cheerfulness imparted to our homes, by white washing the out-buildings and fences about our dwellings and stock yards,—it would contribute materially in promoting the health of our families, both white and black. If the neutralising influence of the alkali of the lime thus spread out tastefully upon our out-buildings, board and picket fences, be not exerted chemically upon the noxious miasm floating in the air during our autumnal evenings and thus protect us from chill and fever,—the exhilarating influence upon our spirits and the new beauties imparted to home by the neat and cheerful aspect thus afforded, will nerve us up to a new and invigorated interest in home, improvement and country.—Ed.

☞ This number of our paper will be sent to many planters and others, who have not yet sent in their names as subscribers, in the hope that they will find it, both in its material and matter, not entirely devoid of interest or unworthy of their patronage;—and we further trust, that they will become enlisted in its behalf and exert themselves in extending its circulation. This is a new enterprise, and the first of the kind in the planting States, outside of the old thirteen, and the position which we have assumed *can be sustained* by the prompt co-operation of the friends of improvement in the industrial pursuits of our country. Those who may not wish to patronise the enterprise can return this number to the Editor, to Lockland Postoffice, Macon county, Alabama, without incurring blame or imputation.

CONSTITUTION

Of the Alabama State Agricultural Association.

1st. This Association shall be and consist of delegates from each County Association, equal to their representation in the House of Representatives of the State Legislature.

2nd. The Governor of the State, in office, shall be Preesident *ex-officio*, of this Association, and there shall be a Vice-President elected from each Congressional District.

This Association shall have a secretary, and Treasurer, who, with three members elected for the purpose, shall constitute an Executive committee.

3d. This Association shall meet annually at the seat of government of this State, on the 3d Monday in November of each year, and shall have power to alter or amend this Constitution by a majority of votes present, and to do all things that shall present themselves of value to the agricultural interests of the State—such as the appointing and holding fairs, offering premiums for the best productions, Animal, Vegetable, Mineral or Mechanical, or of the fine arts, or of any other production of labor or manufacture of this State; and for the best essays on agriculture or any other subject connected with the Association; and for making all arrangements that may connect them with other similar State institutions.

4th. This Association shall raise all money by assessment of a certain sum upon each County Association, and the payment of such assessment shall be left to the option of each Association.

5th. Each county of this State shall be an Agricultural Association, and be governed by this Constitution, and be subject to the action of the State Association.

6th. The County Associations, after they have organized and elected their officers, which shall be a President, Secretary and Treasurer, may hold their meetings at such places and at such times as a majority of the society may choose, and shall elect their delegates to the State Association on the 1st Saturday in October, and give certificate to each member chosen.

teen years old and upwards may become a member by paying annually one dollar to the County Association.

8th. All agricultural societies now existing in this State, shall, by adopting this Constitution, be the County Association of the county they are in, provided there be but one such society in a county but in the event of their being more than one such society, the first established society shall be the County Association, and the others shall be auxilliary to that by adopting this Constitution.

9th. Each and every industrial association of mechanic arts, or society for the promotion of manufactures, or for the advancement of science, or the fine arts, that may or shall be regularly organized in this State, and shall agree to the payment of equal asessments as provided in this Constitution, (Article 4th,) shall be permitted to send three delegates who shall be members of this Association, with all the powers and privileges of delegates to the State Association.

10th. Each County Association shall have power to appoint and hold county fairs, and offer premiums for the best Animal, Vegetable or Mineral production of the county, or for any article of manufacture, or of the fine arts, and for the best essays on any subject connected with this Association, and to make all arrangements, and co-operate with the State Association in all matters they may appoint under the Constitution.

11th. The Judge of Probate of the county shall be President, the Sheriff, Treasurer, and the Clerk of the Circuit Court, Secretary, of the County Association, until as many as ten persons shall sign the Constitution: then they shall proceed to elect the officers of the Association, who shall hold their office for one year.

12th. Each County Association shall have power to make their own By-Laws.

13th. All moneys raised by the County Association for county purposes, shall not be subject to the State Association; but the County Association may respond by the payment of what sums the State Association shall at any time assess by a majority vote of the Association—a quorum being present—which shall consist of ten members.

14th. The meeting that adopts this Constitution in connection with those who may sign the Constitution, shall constitute the State Association until the first annual meeting herein provided for—shall elect the officers of the State Association, who shall hold their office untill they shall be superseded by the regular election of officers by the Association at their first annual meeting, and when such regular election shall take place, the officers elected shall hold their office for one year, and in event of the failure of an election at the regular term of election, which shall be at the annual meeting of the State Association, they shall retain their office till an election does take

15th. A quorum of the State Association shall be any number of delegates that shall meet, according to the provisions of the Constitution.

16th. Each County Association may send as many delegates as they may choose, to the State Association, but shall not be entitled to more votes than their proportion, as set forth in article first of this Constitution.

17th. The President, with the concurrence of the Executive Committee shall have power to call an extra Session of the Association, whenever, in their opinion, the same may be necessary.

Officers of the Association:

The Governor of the State, President, *ex officio.*

VICE PRESIDENTS.

1st District—W. S. PRICE, of Marengo,
2d " E. A. HOLT, of Montgomery,
3d " JNO. STEEL, of Autauga,
4th " ISAAC CROOM, of Greene,
5th " NATHANIEL DAVIS, of Limestone,
6th " REUBEN CHAPMAN, of Morgan,
7th " LEONARD TARRANT, of Talladega,
Secretary....N. B, CLOUD, of Macon,
Treasurer....JNO. GOLDTHWAITE, Montgomery,

Executive Committee.

F. M. GILMER, of Montgomery,
ABSALOM JACKSON, of Autauga,
ALEX. CARTER, of Montgomery.

For the American Cotton Planter,

The Cotton Crop,

Prospects of Consumption, Prices, &c.

DR. N. B. CLOUD.

Dear Sir:—In obedience to your invitation, I submit to the readers of your popular enterprise, the result of my enquiry and investigations, in reference to the above subjects, up to this time.

Before entering into those details, however, we will look at the production of Cotton for the period embraced in the past five years, and for the period of five years before it. In the period first alluded to, it was 12,523,000, in the period before 10,684,000—averaging in the past five years 2,505,000 annually, and in the former period 2,137,000 bales. It is apparent in looking at the annual extent of the crops, that in the past five years, the production has been forced to its greatest capacity, and that four out of the five seasons were highly propitious to its yield. It embraces two of the largest crops ever made, that of 1849, 2,729,000 bales, and that of the commercial year just closed, of 1851-2, of 2,995,000 bales, with exports of two years of 2,350,000.

In reference to the growing crop, we may say, that with the exception of the general complaint, that by the coldness and inclemency of the spring, it was generally a month more backward than last year, the crop on the first of August looked well, and, without casualty, would yield well. Too much rain in Alabama, had sent it too much to weed, and an unusually general complaint of the appearance of the Boll worm came to us from the bottom and black land planters. Notwithstanding the forbearance to loudly complain by the planters, from the experience and observation of the writer, he viewed this early announcement of the worm—in so many different localities, and the fact that rainy and cloudy weather continued to prevail—as very unfavorable as with such

cut off the crops. It will be remembered that a peculiar feature attended both the last cotton crop and the one before,—that was the entire absence of the various destructive worms, which for years previously had become a standing nuisance to this article. They, it seems, must have a moist season to germinate in, which, for the two last crop seasons, they did not have. The frequency of rain in July and August this year, has supplied them in inconceivable numbers, as our accounts for the past ten days confirm. The fatal army worm has appeared in great numbers, and destroyed all the leaves, small bolls and forms on large bottom plantations. This is earlier, to be destructive, than they were in 1846. Intimations before the 1st September, were simply made of such a worm, but it was from the 7th to the 20th September they spread over the cotton region of South Alabama, and with the boll worm, which had preceded it, cut off the crops of the West, South Alabama and Florida. The boll worm had been so destructive, some planters said they doubted if the army worm had been of much real injury, as the boll worm had left little or no forms or small bolls for it to consume.

Such is the nature of our accounts now, that the bottom and black land crop of Alabama is badly injured by the boll worm, and the prospect that all the crop will be seriously affected by the army worm. We are told that the canebreak crop will be cut off one-half.

We have had here very recently a severe storm of wind and rain, and we are beginning to hear accounts of ruined crops on creek and river bottoms. The extent fully of these excessive rains and floods and of their devastation, we are not advised of; they have been terrible in South Carolina and Georgia generally, we many judge from the telegraphic accounts, that all the cotton made on the creek and river bottoms must be materially diminished. From Georgia we hear that the constant rains since 1st August, has caused the bottom and level lands to rust, and the plant had shed all but the grown bolls, and the prospect is it will yield only what is now on it. The army worm has appeared in Florida. We hear that in Eastern Mississippi the boll worm is committing great havoc. The boll and army worm in certain localities in Louisiana and Mississippi have been alluded to, but not in a form sufficiently definite upon which to base any opinion. We may ascribe this to the absence from New Orleans of the most of the merchants, and that planters, having been so wonderfully below the crop in their early estimates last year, have determined to say nothing at all upon the subject. The inference however is, from what we know of the South Alabama crop, that *if so much*, not over an average crop will be gathered in that division. The extraordinary crop of last year, requires some notice, to enable us clearly to present the question of this year's. About the middle of August last year, after an exceedingly dry year throughout the cotton region, it rained generally over it. The immediate consequence was, that all the forms, blooms and small bolls fell off. The planters universally stated that it was too late for the weed to put forth new forms, blooms and to mature the bolls before frost, hence what was on the stalk then, was all that could be realized. The reality however, was very different from these suppositions. The plant sent forth forms and blooms, and the bolls appeared in profusion late in October, which many planters still insisted would not open. The fall continued warm and dry, till unusually late, and they did open, affording to many planters a crop double as large as they expected in August.

In submitting an estimate of the growing crop, the peculiarities of the past extraordinary one, must be forgotten. in some sections and two weeks later in others, the known injury by the worms in South Alabama and Florida, their appearance in Mississippi—2,500,000 bales would be a full estimate now. If these worms spread, the crop may be far below that.

CONSUMPTION.—We have alluded to the peculiar fact, that in the past five years, two very large and two over average crops were made, while the remaining one was but a little below the average of the previous figures.

The simplest mode of illustrating the immense increase of consumption, is to say that the enormous stocks held in Great Britain and the Continent and the United States amounting together to 1,318,000 bales, at the commencement of this period, 1847, and the large cotton crops raised within it, has all *been consumed*, the stocks on the 1st August in Great Britain, the Continent of Europe and the United States, not exceeding about 950,000 bales. The consumption in Great Britain for seven months of 1852 has been 1,204,419 bales—indicating a consumption during the year of 2,100,000 bales. The consumption of the northern portion of the United States is 620,000. The Continent about 1,100,000, making 3,820,000.

Our accounts are that the progress of building new factories both in Great Britain and the Continent, is very animated, which is also the case in portions of our own.

PRICES.—To arrive at probable prices let us examine into the probable supply.

The average supply received in Europe from India, Egypt, &c., has been the past three years 655,000. Our crop of 1852—say 2,500,000 to 2,600,000; making 3,205,000.

As the stock on hand in this country is next to nothing in the ports, and certainly no old cotton back in the country, the imports of Great Britain and the continent from those causes alone will be less than last year. Our crop being later, and the resolution of planters to be more firm than last year in their proper demands for higher prices, will still more lessen the probability of their getting the quantity after 1st of August this, that they did last year. Their imports into Great Britain were 548,000 bales; 300,800 of which was from the United States. Their stock in Great Britain in January next is not likely to be 350,000 bales; the Continent 50 to 75,000 and the United States 77,000; making together, say 500,000 bales.

We have shown the consumption of this year as 3,820,000 bales.

SUPPLY FOR 1853.

Crops of American and other cottons,....		3,255,000
Stocks on hand say 1st January 1853, in Europe and this country,.....	500,000	3,755,000
Showing without calculating for increasing consumption, with this supply, a deficit of.....		65,000

With the present independent position of the Cotton Planters and this encouraging state of the trade in this article without any obstacles to the full expansion of trade and commerce, it is plainly perceptible we think, prices must rule *high* the present commercial year.

MOBILE, September 7, 1852.

THE CULTIVATOR

Is published on the first of each month, at Albany, N. Y.,

BY LUTHER TUCKER, PROPRIETOR.

$1 per Ann.—7 Copies for $5—15 for $10.

☞ All subscriptions to commence with the volume.



A Monthly Journal, devoted to improved Plantation Economy, Manufactures, and Mechanic Arts.

Vol. I. MONTGOMERY, FEBRUARY, 1853. No. 2.

ANALYSES OF THE COTTON PLANT AND SEED.

BY THE LATE THOMAS J. SUMMER, OF S. C.

The natural history of the Cotton Plant,* and improvement in its culture, in the Cotton growing States, are interesting subjects. Originally the production of the tropics, it has, in our country, travelled far into the temperate region, and flourishes on a belt of several hundred miles wide; extending from Virginia, along the sea-coast, to our Western limits on the Gulf of Mexico. Congeniality of climate, seasons and soils, has carried the cultivation of this Plant, which is not certainly indiginous to the United States, much further than was at first expected it would ever be extended; and it has become the staple of all those parts not actually mountainous in the Southern States. Whilst its culture has most rapidly advanced and increased in every section, the Planters of the old Cotton growing States, from the exhaustion of their soils, and the lack of proper systems of Rotation and Manuring, have been thrown in the back ground, in the scale of profitable production, by their more favored rivals, the fortunate possessors of the virgin lands of the South-west. If this deficiency is ever to be remedied; if the fertility of those soils, worn out in the oft repeated production of Cotton, is ever to be restored and permanently improved, for the future culture of this crop, or for other systems of tillage, it must be done under a proper understanding of what constituents are to be restored to the soil, to supply the place of those of which it has been robbed. How far a correct analysis of the Cotton Plant and Seed will enable the present generation of Planters to remedy the lack of fertility in their impoverished soils, and enhance their future productiveness for this crop, it is difficult to determine; but it is no matter of speculation to assert that it is essentially necessary for the improvement of the soil of Cereal crops, that the past industrious despoiling of the natural elements, should furnish a guide for their restoration.

The analytical investigations made by the author, and for their correctness receiving the sanction of Professor Von Liebig, the most celebrated Chemist of the age, and given to the world in their present shape, are not intended as the basis of a new theory for the production of the Cotton Plant, but merely as suggestive of aids, and by returning to the soil what has been taken from it, bringing about a restoration of fertility, which will render its cultivation profitable to Agriculturalists in any other marketable crops. When, however, we reflect, that of the one thousand millions of pounds of Cotton produced in the world, upwards of five hundred and fifty millions of pounds are grown in the United States, we readily see that the importance of this crop —swelling to this enormous amount since 1784, when it was doubted at Liverpool that so much as *eight bales* could be produced in this country— demands all those scientific aids by which other nations have fostered their staple agricultural productions, and thereby contributed to national

*German *Kattunwolle, Baumwolle;* Dutch *Ketoen, Boomwol';* Danish *Bomald;* Swedish *Bomull;* Italian *Cotone, Bombagia;* Spanish *Algodon;* Portuguese *Algodno, Algodeiro;* Russian *Chlobtchatata bumaga;* Polish *Bawelna*; Georgian *Bomba, Bomby;* Latin *Gossypium;* Greek *Bombyx, Ylon;* Mongul *Kabung;* Hindoo *Ruhi;* Malay *Kapas;* Indian *Kepa;* Chinese *Say-Haung, Hoo-Mien.* Skinner, the etymologist, says that Cotton is so called from its similitude to the down which adheres to the quince, *malis cydoniis*, which the Italians call *cotogni*, and *cotoqui*, manifestly *a cydoniis.*

Gossypium, or Cotton, a genus of the polyandria order, belonging to the monoadelphia class of plants, and, in the natural order of ranking, under the 37th order, Columniferæ.—*Encyclopædia Britannia, vol. 8, p. 21.*

prosperity. England, by her commercial enterprize, assumed the pinnacle of national rank. The Cotton Plant, its production and adaptation to human wants by manufacturing skill, will give the blood to invigorate our national prosperity. What a picture of prosperity would be presented, if we manufactured in South Carolina all the Cotton grown in the State, and had sufficient capital and enterprize to concentrate the exportation and exchange of the manufactured material at our Queen city of Charleston? Added to this, how much more pleasant would be the prospect ahead, if the cultivation of this crop was so regulated and carried out that it would fit the soil for the increased after-production of the grain crops—those crops so essential to the prosperity of the world.

ANALYSIS OF THE ASH OF THE COTTON PLANT.

Qualitative Analysis.—A part of the ash was taken and boiled with distilled water, then filtred, the filtrate acidulated with nitric acid, and then treated with sulphate of silver, (AgO, NO_5.) A white precipitate of chloride of silver was formed, showing the presence of chloride.,

Adding muriatic acid to another part of the ash, an effervescence took place, showing the presence of carbonic acid.

Another part of the ash was taken and dissolved in muriatic acid, and evaporated to dryness; then moistened with muriatic acid and digested with water—a residue consisting of coal, sand and silica remained insoluble. The presence of silicic acid was proved by boiling the residue with potassa, (free of silicic acid,) and evaporating the filtrate in the presence of muriatic acid, to dryness, then moistening with muriatic acid and dissolving in water, the silicic acid remained insoluble. A portion of the liquid freed from sand, coal and silicic acid, was nearly neutralized with ammonia, when, upon the addition of acetate of soda, a white precipitate of phosphate of iron was formed.

To a part of the liquid filtred from this precipitate, ammonia was added, which formed a white precipitate, showing the phosphoric acid was not in combination with iron.

To another part of the liquid filtered from the precipitate of phosphate of iron, oxalate of ammonia was added, which formed a white precipitate of oxalate of lime.

The liquid filtered from this precipitate gave, on the addition of phosphate of soda and ammonia, a precipitate of phosphate of magnesia and ammonia, showing the presence of magnesia.

Another part of the liquid, freed from sand, coal, and silicic acid, was boiled with an excess of baryta water and filtered. The excess of barytes in the filtrate was removed by carbonate of ammonia, and filtered—the filtrate was evaporated to dryness, and dissolved in a small portion of water. A part of this solution was treated with bi-chloride of platinum; a yellow chrystaline precipitate was formed, showing the presence of potassa.

A part of the residue was tested with the blowpipe for soda; the presence of which was proved.

A portion of the liquid, freed from sand and silica, was treated with chloride of barium; a white precipitate of sulphate of barytes was formed, showing the presence of sulphuric acid.

Quantitative Analysis.—6.181 grammes of the ash was digested with muriatic acid, and evaporated over a water bath to dryness. The residue was gently ignited, and moistened with muriatic acid, then let stand for half an hour, after which it was digested with water, and filtered upon a weighed filter. The coal, sand, &c., remained upon the filter, and was washed out with boiling water, until, on evaporating a drop of the filtrate on a platina foil, no residue remained.

The filter was now dried, and all the sand, coal, &c., were carefully separated, (in order not to damage the filter,) after which the substance which was on the filter was boiled with potassa in a platina basin over a water bath for one hour; then filtered upon the same filter, washed out with distilled water, and dried at 212 deg., until it remained at a constant weight. After deducting the weight of the filter, there remained 0 621 grammes of sand and coal.

The part soluble in potassa was mixed with muriatic acid, (HCl,) and evaporated over a water bath to dryness; then ignited and moistened with muriatic acid, (HCl,) and dissolved in water, filtered and washed, then dried and burned. It weighed after burning 0.403 grammes, silicic acid (SiO^2.)

The liquid filtered from the sand and silicic acid, measured in a graduated tube, was found to contain 480 cubic centimetres, which was divided into three equal parts of 160 centimitres each, = 2.060 grammes of the ash, for each 160 cubic centimitres of the liquid.

These three parts will be termed A, B and C.

In A, the phosphate of lime, iron and magnesia were estimated.

In B, the sulphuric acid, and the entire quantity of phosphoric acid.

In C, the alkalies.

A.

The liquid A, was nearly neutralized with ammonia, then acetate of soda, and free acetic acid were added. The precipitate was left standing for 24 hours, after which it was filtered and washed out with boiling water, then dried and burned. It weighed 0.346 grammes, or, for the

entire liquid, 1.038 grammes of $2Fe_2O_3\ 3PO_5$, or, 0.507 grammes of Fe_2O_3 (oxide of iron.)

The liquid filtered from the precipitate of phosphate of iron was treated with oxalate of ammonia. The precipitate of oxalate of lime was filtered, washed, dried and burned. It weighed after burning, 0.643 grammes of carbonate of lime, (CaO, CO_2,) or for the entire liquid, 1.929 grammes, (CaO, CO_2,) = 1.092 grammes lime, (CaO.)

The liquid filtered from the oxalate of lime was evaporated over a water bath, to a smaller volume, then phosphate of soda and ammonia, were added, and the precipitate left standing for two days, after which it was filtered and washed out with water containing one-eighth of ammonia, and burned until it was white. It gave 0.391 grammes of $2MgO, PO_5$, (pirophosphate of magnesia,) or, for the entire liquid, 0.903 grammes = 0.330 grammes MgO, (magnesia.)

B.

The solution B was precipitated while boiling with chloride of barium, and left standing on a sand bath for 24 hours, then filtered and washed with boiling water, dried and burned. It gave 0.079 grammes sulphate of barytes, (BaO, SO_3,) or, for the entire liquid, 0.237 grammes (BaO, SO_3,) = 0.081 grammes sulphuric acid, (SO_3.)

The liquid filtered from the precipitate of BaO, SO_3, was mixed with per chloride of iron and acetate of soda, and boiled for five minutes in a large flask; then the precipitate of phosphate of iron and basic acetate of iron was filtered while warm, and washed with boiling water, until, on evaporating a drop of the filtrate, there remained no residue.

The precipitate was dissolved while moist, in as small a quantity of muriatic acid as possible. Tartaric acid and ammonia were now added in excess, when to the clear, yellow-colored solution, a mixture of sulphate of magnesia and chloride of ammonia was added, to prevent a precipitate of magnesia. The precipitate was left standing for two days, after which it was filtered and washed out with water containing ammonia. When dried, burned and weighed, it gave 0.442 grammes of $2MgO, PO_5$, or, for the entire liquid, 1.326 grammes of $2MgO, PO_5$ = 0.837 grammes phosphoric acid, (PO_5.)

C.

Baryta water was added to this solution, until an alkaline reaction had taken place, then boiled and filtered. The excess of barytes in the filtrate was removed with carbonate of ammonia and free ammonia; the filtrate was evaporated over a water bath to dryness, and ignited until it was free from all ammoniacal salts, then dissolved in water. Some magnesia remaining insoluble, was filtered off, and the filtrate again evaporated to dryness and ignited, then weighed. It gave 0.770 grammes of the chlorides of the alkalies, which is for the entire liquid, 2.310 grammes. These alkalies were again dissolved in a small quantity of water, and the potassa estimated with bi-chloride of platinum, which gave, after being evaporated with alcohol over a water bath, 2.356 grammes of double chloride of potassium, and chloride of platinum, ($KCl, PtCl_2$.) This represents 2.157 grammes, chloride of potassium, (KCl,) or 1.326 grammes potassa, (KO.)

There remains, consequently, after subtracting the chloride of potassium from the chlorides of the alkalies, as follows, the amount of chloride of sodium, which is estimated as loss, thus, 2.310 KCl, NaCl, — 2.157, KCl, = 0.153 (NaCl,) chloride of sodium.

2.970 grammes of the ash, was boiled with distilled water, and filtered. The filtrate was acidulated with nitric acid, then precipitated with nitrate of silver. It gave 0.044 grammes chloride of silver, (AgCl,) or 0.022 grammes chlorine (Cl.) Also 0.153 grammes NaCl — 0.037 grammes, NaCl = 0.116 grammes chloride of sodium, (NaCl.) = 0.961 grammes soda, (NaO.)

1.066 grammes of the ash gave 0.168 grammes carbonic acid, (CO_2.) The following is the percentage of the constituents in 100 parts of the ash:

Grammes found.		*Percentage.*	
Silicic Acid,	0.403	6.50	SiO_2
Sand and Coal,	0.621	10.04	Sand & Coal.
Oxide of Iron,	0.507	8.20	Fe_2O_3
Oxide of Lime,	1.092	17.66	CaO
Oxide Magnesia,	0.330	5.33	MgO
Sulphuric Acid,	0.081	1.31	SO_3
Phosphoric Acid,	0.837	13.37	PO_5
Potassa,	1.362	22.01	KO
Soda,	0.061	0.99	NaO
Chloride Sodium,	0.037	0.05	NaCl
Carbonic Acid,	0.168	15.72	CO_2
		101.19	

ANALYSIS OF THE ASH OF COTTON SEED.

Preparation of the Ash.—The seed were burned in a Hessian crucible, with a muffle. Only a slight red heat was necessary to burn them perfectly white.

For estimating the amount of water, 6.406 grammes of the seed were taken and dried at 212 deg., until they remained at a constant weight. They gave 0.646 grammes water, = 10.08 *p. c.* —in 100 parts of *the seed.*

Estimation of the Ash.—The seed were dried until they remained at a constant weight, then burned in a platina crucible. 6.587 grammes of the dried seed gave 0.237 grammes ash—equal to 3.8 per cent ash, in 100 parts of the dried seed.

The qualitative analysis showed that all the constituents were present which were in the ash of the plant, with the exception of carbonic acid.

The quantitative analysis was carried out similar to that of the ash of the plant, heretofore described.

The following are the results: 1.882 grammes of the ash were used.

Found.		*Per Cent.*	
Phosphoric Acid,	0.667	35.43	PO_5
Oxide of Iron,	0.075	3.43	$Fe_2 O_3$
Coal,	0.020	1.05	Coal
Sulphuric Acid,	0.060	3.19	SO_3
Oxide of Lime,	0.204	10.88	CaO
Oxide of Magnesia,	0.200	10.61	MgO
Potassa,	0.523	27.82	KO
Soda,	0.051	2.75	NaO
Silicic Acid,		Trace.	
Loss and Chlorine,		4.84	
		100.00	

WOOL AND WOOL-GROWING.

NASHVILLE, TENN., Oct. 21, 1850.

Sir: Your favor was duly received, and I cheerfully make a communication for your Annual Report, on the subject of wool-culture and sheep-husbandry, in the low latitudes of the United States. Observation and many years' experience have brought me to different conclusions from all others who have written on this subject, upon the effects and influence of warm climates on wool-growing, and especially upon the finest Saxony wools.

In a letter addressed to the Commissioner of the Patent Office, and published in the Report for 1848, page 627, I expressed the opinion that "the United States are a better wool-growing country than any portion of Europe; that the *low latitudes* have an advantage over the high, and will produce finer wool; and also, that as fine wool is now grown in the United States as can be found in the world."

I stated further, that I had studied this subject with diligence and devotion for thirty-five years, and thought I had come to corect conclusions; but the Commissioner, Hon. E. Burke, decided that I "was wrong, and most decidedly mistaken in the whole matter;" and that Mr. Fleischman's views, who had said that we must go to Germany for sheep, if we hoped to succeed, were no doubt correct. Still confident that my long study and experience had not misled me, when the Commissioner published his Report and remarks, I addressed him a letter, which may be found in *The Plow, Loom and Anvil*, page 366, December No., 1849, offering to exhibit selections from my own flock, in latitude 36 deg., against any sheep which could be found in all Silesia, or any high latitude in Europe, and especially above 50 deg. north latitude. This offer has not been accepted, and I have no fears of the result, if it should ever be.

It is gratifying now to refer to the impartial evidence science of in favor of the positions taken. I was certain the facts existed, but I did not know that the researches and inventions of our countryman, P. A. Browne, Esq., of Pennsylvania, would so soon present the testimony in so satisfactory and tangible a shape. Mr. Browne practiced law for more than thirty years in the city of Philadelphia; retired from practice, he has devoted years to the study of hair and wool, aided by the lights of others and his own inventions. I consider his examinations, therefore, entitled to full faith and credit.

From two letters addressed to the Hon. R. R. Reed, of Pennsylvania, and myself, published in the May No. of *The Plow, Loom and Anvil*, 1850, I beg leave to make a few extracts, which show important results to the United States, because it places her at the head of the list of all countries for fine wools.

Mr. Browne examined sixty-five samples, or collections of samples, from all parts of the world, and especially the eighteen samples brought over by Mr. Fleischman from the most renowned flocks of Europe, and distributed, through your office, to the several States, as the standards of excellence, and worthy of imitation.

The quality is expressed by the number of fibres which will cover an inch; or, the diameter of one fibre is that fraction of an inch. The low figures indicate the coarser wools, and the high figures the finer:

		To an inch.
No. 4.	Common American wool,	500
No. 4.	The wool of Leceister, England,	500
No. 4.	The Irish long wool,	560
No. 17.	Wool of Odessa,	750
No. 31.	Three quarter Amer. Saxony,	1041
No. 32.	Wool from the herd of Dambran, improved by buck from Prince Lichnowsky, by Mr. Fleischman,	1093
No. 34.	Lamb from the Duke of Leitcheman, in the possession of Hon. R. R. Reed, Pennslyvania,	1093
No. 37.	Wool from buck "Napoleon," valued at $1,500, owned by M. Heller, of Chrezelitz, whose flock is considered the only rival to that of Prince Lichnowsky, collected by Mr. Fleischman,	1200
No. 38.	Wool from a buck of the herd of Reti, from Hungary, by Mr. Fleischman,	1200
No. 39.	Ewe of Prince Lichnowsky, Kuchelna,	1250
No. 40.	Buck of Roggon, in Mecklenburg, collected by Fleischman,	1250

No. 42. Ewe from the Duke of Leitchenan, dam of the ram of the Hon. R. R. Reed, 1250
No. 45. Another ewe of Prince Lichnowsky, by Mr. Fleischman, 1562
No. 46. Buck near Moscow, Russia, by same, 1572
No. 47. Buck of Prince Esterhazy, by same, 1572
No. 50. Ewe of the herd of Guettsnandorf, celebrated for its thorough blood, by same, 1580
No. 51. Buck of the herd of the Viceroy of Hungary, 1600
No. 54. Buck of Gross Herlitz, Silesia, 1875
No. 61. Specimen from a wool-merchant, Dresden, 2186
No. 57. Ewe of Col. Randall, New York, 1875
No. 57. Specimens from five ewes and five bucks of Mr. S. Patterson, Pennsylvania, 2186
No. 57. Specimen of Col. Lee's flock, Pennsylvania, 1875
No. 57, Flock of Mr. Robert Allen, Virginia, 1875
No. 65. Five specimens from the flock of Mr. Mark R. Cockrill, Tennessee, as follows:
No. 1. 1572
No. 2. 1875
No. 3. This is a beautiful, even wool, 1875
No. 4. This is a clean, even wool, of the extreme fineness of 2186
No. 5. Not uniform, 2186
No. 6. Some strands in this specimen, 2500

The above is the evidence of scientific instruments in the hands of a gentleman devoted to the investigation of this subject, and fully sustains my position, that the United States are growing as fine wools as Saxony, Silesia, or any other part of the world.

Mr. Fleischman recommended in his report, that wool-growers should go to Chrezelitz and give Mr. Heller $1,500 for such bucks as "Napoleon," for the purpose of improving the *quality* of our wool. Compare the sample from "Napoleon" with the samples in Mr. Browne's cabinet, from New York, Pennsylvania, Virginia and Tennessee:

United States samples, 1875, 2186, and 2500
"Napoleon," rival flock to Prince Lichnowsky, 1200

Was I mistaken, then, when I said that as fine bucks could be purchased in the United States for $50, as those in Germany which are valued and sold at $1,500? What improvement in *quality* of wool would such a buck as "Napoleon" be to the flocks of New York, Pennsylvania, Virginia and Tennessee, which grow the samples in the above collection, running from 1500 to 2500, whilst he wears a coat grown in the snows of Northern Europe, of only 1200 to the inch?

The samples from the flock of Prince Esterhazy, of Hungary, is 1572. This Hungarian Prince, it is said, owns a flock of 3,000,000 sheep, and 4,480,000 acres of land. We have a right to suppose that he has done everything that wealth and leisure could accomplish in *that latitude* to improve his flock. Yet, would a buck with a fleece of 1572 be an improvement upon our ewes in the low latitudes of 36 deg., which bear now the "beautiful, even fleece of 2186?" The same remarks apply with equal force to the flock of Prince Lichnowsky, of Kuchelna, whose samples are 1550 and 1262.

I cannot omit a notice of a remark of Mr. Fleischman, at page 306. He says: "It has been found that the highly improved sheep do not last well in America, and that the wool grown in America by the German sheep does not at all compare with that grown in Germany."

I can excuse Mr. Fleischman's partiality for his "fatherland," but I should do injustice to our own country not to challenge a test of such statements. I hold directly the reverse of both these propositions, and, on the subject of wool, refer to the testimony of Mr. Browne, who deserves from our wool-growers a service of plate and a suit of clothes from the "beautiful fleece of 2186," for his investigations in this important product.

There is a traditional belief entertained by the greater portion of the world, that sheep, by nature, belong to a *cold climate;* and that when they are removed from a cold to a warm climate, the wool will grow coarser. My observations and reflections on this point, have convinced me that, when the latitude is not below 30 deg. north, the reverse of this tradition is true. I believe that the improved Saxony sheep, brought from the snows of Russia to Texas, in the United States, will produce a finer, evener and fuller fleece than while in Russia. I think the evidence is pretty conclusive that the Merino sheep are natives of the orange groves, and are fitted by nature for the warm climates generally. Climate is a law of nature, and her laws are in harmony. The animals fitted for warm climates are most healthful and vigorous, under the action and influence of these laws. The elephant, lion and camel are organized to bear, with healthful influences, the long-continued heat of Africa, and the white bear grows fat on the ice of the Arctic seas. I can, with confidence, say to all husbandmen in the cotton districts of the United States, that, for fine wool-growing, they have nothing to fear from the climate.

I consider Texas an admirable location for wool-growing, as there is a scarcity of timber, and it is not so well adapted to other agricultural pursuits. The prairies are productive of grass

without the labor of man. The winters are mild, open and warm, furnishing green food, with a regularly growing fleece, throughout the year. Population sparse and lands cheap, requiring but a small capital to engage profitably in the business. Our population is rapidly increasing, and must continue to do so; and last year we imported nearly 20,000,000 pounds of raw wool, besides the woolen goods which we take annually from foreign countries. These are strong facts in favor of a continued demand for wool.

Though cotton—the happy gift of Heaven to that class of men blessed with the fewest comforts of life—is steadily in competition with all other materials for coarse goods, yet there are appropriate uses for wool which nothing else can supply. The cotton district, embracing ten States, and about 500,000 square miles, presents a wide field for the growth of wool. The resources of the South are but partially developed, and I am happy to see Southern opinion awakening on this subject. The spindles and looms are coming to the cotton fields, and when they are up, the cotton crop alone will yield $150,000,000 per annum. The wool crop, at twenty sheep to the square mile, will yield 10,000,000 pounds, besides rice and sugar. We have spread over our cotton territory, and the great enterprise of opening new cotton States is nearly closed. We have $750,000,000 invested in the growth of cotton, an enterprize of comparatively but a few years, and the addition now of the spindles and looms in the cotton fields will double the product of this great growing capital, and insure consumption by furnishing coarse goods for the laborers of all the world, at cheaper rates than they ever have been or ever can be furnished elsewhere.

The cotton district of the United States is to become, in a few years, the dispenser of a great public charity, by furnishing the laborers of many portions of the world with the cheapest clothing made in Europe or America. The wool crop may be grown in the cotton district, without diminishing the latter, and thus add to the resources of the South. All the cotton region is adapted to wool and sheep.

In my estimation, the South is not dependent and not weak; but rich in natural advantages, and now ready to say she will turn to account the gifts of nature, and show the strength of her position. No power at home or abroad has any just right to interfere with our domestic relations and thereby disturb our quiet, and arrest the full developement of our resources.

I have said that the low latitudes of the United States will grow the finest Saxony wool, finer than Silesia, the boasted province of Europe. I am also satisfied that the intellect of the Caucasian race, under the genial influences of our Southern sun, and the effects of our domestic relations, is more rapid, more polished and more brilliant, than it is in the higher latitudes of our own country. Mind is power, and the South may add this to its other natural advantages; and these powers, when developed and understood, and associated in harmony, point to a prosperous destiny. I am, very respectfully, yours,

MARK R. COCKRILL.

Hon. THOMAS EUBANK, *Com. of Patents.*

[From DeBow's Review.]

THE HISTORY OF COTTON MANUFACTURES.

We have the authority of the Sacred Scriptures for saying that fig leaves formed the first clothing used by man; that skins of beasts probably came next, and after these probably cotton, wool and silk, in the order in which we here give them. Whether cotton, wool or silk, was the first natural product manufactured into clothing, is a question which has not been much discussed, and one, too, which it would be difficult to answer. The earliest historical records throw but little light on the subject. According to the most learned commentators, it cannot be fully determined whether silk is ever mentioned in the Old Testament. It is true that the word *silk* is found in King James' translation, but it is quite unauthorized. The meaning of the Hebrew word, translated *silk* in the common English Bible, and *trichapton* in the Septuagint version, cannot be determined, for *trichapton* is in reality as obscure as the Hebrew word itself. Jerome could not make out its meaning, and concluded that the word was invented by the translators. It is found nowhere out of the Septuagint, except in a passage of Pherecrates, a comic poet of Athens, contemporary with Plato and Aristophanes. Braunius, in his *De vestitu Heb. Sacerdotum*, gives the whole question a full examination, and decides that there is no mention of silk in the whole of the Old Testament, and that it was unknown to the Hebrews in ancient times.

Whether cotton was used before wool, depends, we conceive, much upon the question regarding the situation of the Garden of Eden; but this question cannot be determined. If the first inhabitants of the earth dwelt in a region producing cotton as a spontaneous production, it is probable that cotton was the first article manufactured into clothing after leaves and skins; but if the locality of Eden lay in any other region, wool was probably the article used first.

So far as all existing historical records aid us in determining the question, we think that the weight of evidence is in favor of cotton as the first manufactured article of clothing. We know that cotton was an article of clothing in common use in India in very remote ages, and that the Indians had brought its manufacture to a very high

stage of perfection at a period when neither Egypt nor any of the western nations had any knowledge of its growth or manufacture. Growing too, as it did, spontaneously, it would naturally present itself as the easiest article for manufacture that could be found. Men would hardly go to the greater trouble of raising sheep, for their wool, when the earth presented them everywhere with the beautiful pods of silky cotton.

Undoubtedly the inventive faculty of man began to exhibit itself at a very early period; but the insect world taught man the art of weaving. The spider, says an ingenious and learned author, "may be regarded as the earliest practical weaver on record;" and he might have said spinner; while the much despised wasp may claim the honor of being the first paper manufacturer, since it produces an undoubted specimen of paper in the material of its nests, of so smooth and hard a surface as to admit of being written upon with ease and legibility.

The antiquity of the manufacture of cotton cannot be reached by any authentic records. Neither wool, silk, nor linen can claim a higher antiquity. One thing is pretty certain, that its first manufacture may be traced to India, whence it passed to all the rest of the world. India, indeed, has been the source of many of the arts of civilized life. It was, in all probability, the cradle of mankind, and the source of Assyrian, Egyptian and Persian civilization.

The Indians have, in all ages, maintained an unapproached and almost incredible perfection in their fabrics of cotton. Indeed, some of their muslins might be thought the work of fairies or insects, rather than of man; but these are produced in small quantities, and have seldom been exported. In the same province of India from which the ancient Greeks obtained the finest muslins then known, namely, Bengal, these astonishing fabrics are manufactured at the present day.

We are told by two Mahammedan travellers, who went to India in the 9th century, "that in that country they make garments of such extraordinary perfection, that nowhere else are the like to be seen. They are woven to that degree of fineness that they may be drawn through a ring of moderate size." Marco Polo, in the 13th century, mentions Coromandel, and especially Masulipatam, as "producing the finest and most beautiful cottons that are to be found in any part of the world;" and this is still the case as to flowered and glazed cottons, called chintzes.

The Portuguese adventurers who went to India immediately after the discovery of the route by the Cape of Good Hope, speak of "the great quantities of cotton clothes admirably painted, also some white and some striped, held in the highest estimation, which were made in Bengal." Cæsar Frederick, a Venetian merchant, who travelled in India in 1563, describes the extensive trade carried on between St. Thome, a port 150 miles from Negapatam, and Pegu, in *bumbast* (cotton) cloth of every sort, painted, which is a rare thing, because this kind of cloths show as if they were gilded with divers colors, and the more they are washed the livelier the colors will become; and there is made such account of this kind of cloth, that a small bale of it will cost 1000 or 2000 ducats."

Tavernier, who travelled in India about 200 years ago, speaks of the white calicoes (so called from the city of *Calicut*, in India, where they were first seen by Europeans) or muslins woven in Bengal, and rendered so remarkably white by being dipped in lemon juice. He says, "some calicuts are so fine that you can hardly feel them in your hand, and the thread when spun is scarce discernible." The same writer says, that there "is made at Seconge, in the province of Malwa, a sort of calicut so fine, that when a man puts it on, his skin shall appear as plainly through it as if he were quite naked; but the merchants are not permitted to transport it, for the Governor is obliged to send it all to the Great Mogul's seraglio and the principal lords of the court, to make the sultanesses and noblemen's wives shifts and garments for the hot weather; and the king and the lords take great pleasure in beholding them in these, and seeing them dance with nothing else upon them." Of the turbans of the Mohammedan Indians, Tavernier says: "The rich have them of so fine cloth, that twenty-five or thirty ells of it, put into a turban, will not weigh four ounces."

Eighteen hundred years ago, according to Arrian, author of the Periplus, there were thousands of men, women and children employed at Baroche, in Guzerat, and the adjacent villages, in the manufacture of cotton, from the coarsest sail-cloth to the finest muslins. So that it is a great mistake to suppose that cotton manufactories are of modern origin. They existed in India centuries before the Christian era.

The ingenuity of the Hindoo cotton manufacturers is truly wonderful. The late Rev. Wm. Ward, a missionary at Serampore, says: "At two places in Bengal, muslins are made so exceedingly fine that four months are required to weave one piece, which sells at five hundred rupees. When this muslin is laid on the grass, and the dew has fallen upon it, it is no longer discernible." We might cite a great number of creditable authorities in proof of the fineness of India cotton manufactures, and the ingenuity of the Hindoos, but these will suffice. The oriental hyperbole, which describes the muslins of Decca as "*webs of woven wind*," is less poetical than is generally supposed. No modern European manufacturer of cotton at all approaches the Hindoos, in respect to the fineness of his fab-

rics. The extreme of fineness to which yarns for muslins are now spun in Great Britain, is 250 hanks to the pound, though cotton yarn has been spun in England making 350 hanks to the pound. This was, however, only an experiment, to ascertain how fine cotton could be spun. No such yarn is or could be used in making muslins, or for any other purpose. The Hindoos are the only ones who have ever woven such yarns into fabrics.

The cotton manufacture in India is not carried on in a few large towns only, or only in one or two districts; it is universal. Almost every village has its weavers. Orme, in his Historical Fragments of the Mogul Empire, says: "At present much the greatest part of the whole provinces are employed in this single manufacture of cotton. The progress of the cotton manufacture in India includes no less than a description of the lives of half the inhabitants of Hindoostan."

Dr. Hamilton, in his account of Patna, mentions it as a fact, strikingly illustrating the national character of the Hindoos, that "all Indian weavers, who work for the common market, make the woof of one end of the cloth coarser than that of the other, and attempt to sell to the unwary by the fine end, although almost every one who deals with them is perfectly aware of the circumstance, and although in the course of his life any weaver may not ever have an opportunity of gaining by this means, yet he continues the practice, with the hope of being able, at some time or other, to take advantage of the purchaser of his goods."

It is a matter of great surprise that the Hindoos, with such rude materials for manufacturing, should be able to produce fabrics of such exquisite delicacy and beauty, unrivalled by the products of any other nation, even those best skilled in the mechanic arts. This is explained by the remarkably fine sense of touch possessed by the effeminate Hindoos; by their patience and gentleness; and by the hereditary continuance of a particular species of manufactures in families through many generations. It is further observed, that every distinct kind of cloth is the product of a particular district, in which the fabric has been transmitted from father to son for centuries perhaps.

The commerce of the Hindoos in cotton fabrics has been extensive from the time of Christ to the end of the last century. For many hundreds of years, beginning even farther back than any authentic record carries us, the Hindoos, probably, supplied Persia, Arabia, Syria, Egypt, Abyssinia, and all the eastern parts of Africa, together with Europe, with all their cottons and muslins. The great marts of this commerce were at Surat and Calicut, on the west coast of India, and at Masulipatam, Madras and St. Thome, on the east coast.

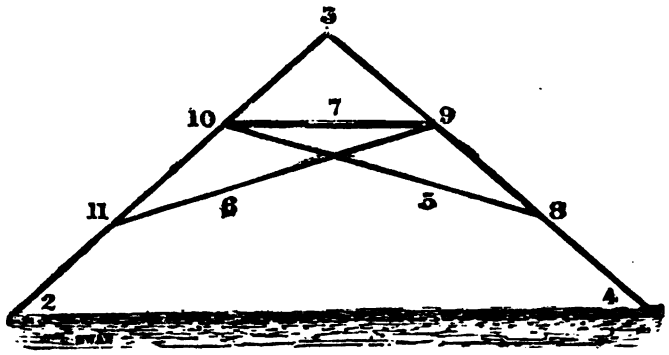
At one time the manufacturers of all Europe, owing to the beauty and cheapness of India muslins, chintzes and calicoes, apprehended ruin by their competition. In the seventeenth century, the Dutch and English East India Companies imported these goods in large quantities, which importation, in 1678, produced, in England, a loud outcry against the admission of India goods, which, it was maintained, were ruining the woolen manufacture. The interference of cotton with woolen fabrics was greatly dreaded in England. The English regarded the woolen manufacture, for many centuries, with almost superstitious veneration. It was, in fact, the most extensive branch of manufactures in the world, save that of cotton in India, until the commencement of the present century, and the English looked upon it as the palladium of their national prosperity.

(To be continued.)

To Preserve Fresh Meat.—As the weather in this climate is variable, it is important that those who are situated so that they cannot always procure a supply of fresh meat when wanted, should know how to preserve it. The ordinary method of putting it in an ice-house, down the well, and other cool places, keeps it but a short time; but it is suggested by the *National Gazette* that it may be kept sweet for years:

For household purposes, the most convenient way will be to provide a number of earthen jars, with ground covers and a small hole in each cover, like that in a tea-pot, which may be stopped easily. The meat may be first partly boiled and deprived of its bones, and be then put, with part of the liquor, into the jars, which must be set in a pan of warm water, and gradually brought to a boil. When the steam is rising from the jars, the covers must be put on and fixed down air-tight, the steam generated in the meantime being suffered to escape from the lids. Finally, the pan must be removed from the fire, the holes in the lids being stopped with small corks, and these corks waxed over to make them more impenetrable. It may also be a good precaution to run a little melted wax round the edge of each cover, to obviate the leakage due to any imperfection of the surfaces in contact. Meat might also be preserved by repeatedly dipping it in melted fat, the same as they do candles, till it had a protecting coat of tallow which the air could not penetrate. Vegetables may be preserved in jars as above, as well as meat.

Draining.—The draining of wet lands and marshes adds to their value, by making them produce more, and better crops—by producing them earlier, and by greatly improving the health of neighborhoods.



THE FARMER'S LEVEL.

The legs of the level, 2, 3 and 3, 4, are eight feet long, and one inch thick, and three broad. The cross bars are the same width and thickness. All of these pieces are let into each other, and secured by wooden screws. The stride of the level from the leg 2 to the leg 4 is just twelve feet. The cross bars 8, 10 and 9, 11, as you will see by measurement, go on the side pieces, or legs of the instrument, one third of the distance from the heel and crown; that is, the ends 8 and 11 are one third the length of the legs from the heels 2 and 4; likewise, 9 and 10 are one third from the crown. The light bar 7 represents the box into which the spirit level is placed, and should be only large enough to receive it, so that it may not rock in the box when carried, and is screwed on to the bars 8, 10, 9 and 11.

How to put the box on, so as to have the true level, is the question. Then observe the following rule: Screw one end of the box to cross bar 9 and 11, with a hand vice clamp; the other end to cross bar 8 and 10, and take the instrument to a slight hill side, and put the legs on ground, as nearly the same level as your eyes dictate, and observe where the bubble in the tube stands; then reverse the legs, and place each exactly where the other stood, and the bubble in the tube will indicate whether the end held by the vice should be moved up or down. After repeated shiftings of the feet and moving the end of the box, you may get the bubble to stand at the same place with the legs shifted; then you may be certain that you have the true level. Then the box should be made fast by a screw, as the first end was.

Now, to get a grade for cutting inclined ditches, I would recommend a more simple and easy method of getting the grade than that laid down in my first number to Mr. Howard. It is simply this: The true level having been obtained in the way above described, take your level and place it on the ground, moving one leg up or down until the bubble stands in the centre; then take a block as thick as you want your fall, say 3¼ inches in 12 feet, and put it under one foot of the level; then raise one end of the spirit level in the box, until the bubble stands at the level point; then, with the point of a knife, make a mark on the end of the level at the top edge of the box, and then saw in with a tenant saw, say one inch, and slip in a piece of tin, long enough to reach the bottom of the saw cut and reach over the edge of the box—and you are prepared for ditching. R. S. H.

HILL-SIDE DITCHING.

No. 2.

To Augustus Howard, Esq.

Dear Sir: In my letter of the 15th of June, I promised in my next to give some of the reasons why the system there described was better than any of the great variety practiced to prevent the washing of our fields; to answer a few of the objections to the horizontal culture, and show why none of the various systems that approximate to it, and are intended to supersede it, and by many of their votaries thought to be equally good, if not better, will do.

Whether I shall be able to satisfy you and others before whom this communication will come that the system described will do what is claimed for it, the sequel only will prove. Certain I am that I shall not be able to shake the faith of the anti-improvement, knock down, drag out, kill and cripple advocates. They are so joined to their vandal policy that it is quite as well to let them enjoy the (to them) sweet reflection, that when they are done with a piece of land, it will do no one else any good—that posterity must do as they have done—take care of themselves.

To such I have not a word. On them argument is thrown away, and proofs demonstrable are not understood—not for a want of capacity, but from a determination not to be convinced. Like carniverous animals, they seem to have a natural propensity to destroy.

Before an impartial judge, I feel confident that the system will be sustained; and believing that I have one in the person of yourself, as well as

many others, I with confidence proceed to the task.

I lay down in the outset the premises, that no system of culture can secure the land from washing that does not prevent the water from embodying itself; and that any system which does will protect it from any material injury.

To prove this position, you may take, or imagine to yourself, a field that is a perfect inclined plane, (and I intend the word *perfect* to have the benefit of its fullest signfication,) and suppose the rain to fall on it until the earth is fully saturated—the balance must flow off as a matter of course. The plane being perfect, the water naturally flows directly down it, and will be equal at all points, forming a thin sheet all over the surface, no thicker at one place than another. Because of the perfectness of the plane, and the water falling equally all over it, it will of course move off at all points at the same time; and for the same reason, the relative positions of the different parts of the body will be preserved, until it has all in succession passed over the lower edge of the plane.

A moment's reflection will satisfy you that none of the plane is washed, because the moving sheet of water, equal at all parts of the field or plane, although perfectly inundated, is too light and thin to take with it any earth. The sheet of water, in its movement down the plane, is never increased in bulk or thickness by overtaking other water, or meeting with it from lateral directions. It can only be increased by the falling rain, and it is reasonable to suppose that it will be equal all over the field. Thus you perceive that the rain would have to fall fast enough to increase on the plane until there was sufficient weight in the sheet of moving water to take earth with it. And you further perceive, that if it washed at all, it would be equal at all points of the plane, because it is perfect—the sheet of water being of equal weight and thickness, and moving with equal velocity at every point. It is admitted on all hands, that it is not the water that falls on land that washes it; but the collection of water from other parts passing over it in a current having weight and velocity. Nothwithstanding the water that falls on the upper side of the plane has to pass across it, because of the perfectness of the plane, and the laws of gravitation, every part of the sheet is made to preserve its relative position, and can only be increased by the falling water; hence the sheet of water will be too thin ever to materially injure the land.

Now, sir, if I have made myself understood, the main point in the case is made out, and all that remains to be done is to apply it.

Perfectly horizontal rows, and perfectly parallel to each other, form a perfect inclined plane, no matter how many various directions they may take, or however serpentine they may be. The first, or guide furrow, being level, suppose the land to fall one inch in five feet, and the next rows being run parallel to, and just five feet from the guide rows, would make an inclined plane of one inch in five feet, and just so with all the other parallel rows to that guide furrow. Thus the various guide furrows described in my communication of the 15th of June, are the governing rows, to which the parallel rows are run —and when properly run, an inclined plane is formed, taking any one row with the row next above and next below. The necessary inclined or graded ditches having been made, the land bedded up on a level, and planted, if you please, or if you would rather, will you suppose the crop to have been ploughed over, and then, by way of testing your work, you have a heavy fall of rain, sufficient, we will suppose, to overrun the water-furrows, or finishing furrow, between your beds. We will now see the result. The rows being level, the water stands in the water-furrows, or middle between the rows, equally from one end to the other; and when it can hold no more, it then passes over the bed below, from one end to the other. And just so with all the rows in the field, if the depth of the water-furrow is about the same and a good level is preserved. The water-furrow will overflow as soon on the hill-top as on the hill-side, or in the valley; and although the same row may pass round the side of a hill, and through a valley, and over comparatively level land, it will overflow at all points at the same time, simply because the row is level, the water remaining where it falls until the water-furrow is full. The water furrows becoming full at the same time, they all flow over simultaneously. Thus a sheet is formed, and takes its direction down the different planes, and is received by the ditches below and borne out of the field. Now, there would be no necessity for the ditches, if you could keep up your inclined plane perfect throughout the field, which you could do but for the various undulations of the land. These undulations compel you to have as many inclined planes as there are changes in the surface; and not unfrequently they face each other, or, in other words, incline towards each other, having a bottom between them, reaching from the base of the one to the base of the other. Thus you perceive that the water of these two planes must meet, unless prevented by a ditch. I mean then to say, that by this system, such an inclined plane is formed as to receive the water by the ditches before it can become embodied, after overflowing the water-furrows.

I tried the horizontal system for several years without the ditches, and with moderate rains my success was satisfactory; but when the rain was so great as to overflow my water-furrows, mischief was done to the land just in proportion to the extent of the rain. It is easy to perceive why

I did not then succeed. The various inclined planes formed by the horizontal rows, over which the various sheets of water were moving by the overflowing of the water-furrows, passed down their respective planes; and because of the various changes in the planes by the undulations of the land, the water was necessarily thrown into bodies, and a wash was inevitable. Properly graded and located, ditches are a sovereign remedy, and since I have united them with the horizontal system, my success has been perfectly satisfactory.

Another reason is, that in all rains, whether great or small, that do not overflow the water-furrows, the water is retained within the rows on which it falls; consequently the water is more equally distributed over the fields than if it was permitted to run from the hills to the vallies.

Again; by the falling of rain the lighter and finer particles of the earth are taken up and float in the water, which is called sediment, and all of which is retained to the land, if the water is held by the water-furrows; and if the water-furrows overflow, even then much more is retained than by any other system; because, as soon as the rain ceases, the overflowing water passes off by the aid of the ditches, the water-furrows retaining all that they can hold, the sediment contained in which is retained to the land.

Again; by this system, a less amount of rain will suffice to make a crop. In all moderate rains all the water is retained to the land, and just where it falls; consequently moisture is longer retained and more perfectly equalized than if the water had been permitted to run down the declivities to the bottoms, and in many cases out of the field.

Lastly; land will retain its fertility longer under this system than any other; and if reduced to poverty by the old kill and cripple system, can by this the sooner be restored and brought back to its maiden fertility, all other things being equal. To establish this point, one plain and simple reason will suffice. When a piece of land is first reduced to cultivation, if a system should be established that would perfectly protect it from washing, whereby all the offal from the crops would be retained to the land, it certainly cannot deteriorate as if its soil was floated off by every heavy fall of rain. In the one case, its fertility is only reduced by giving up the necessary quantity of food for the growing crop; while in the other case the same thing is done, and the washing of the land besides, which, in wet years like the present, amounts to much more than the necessary food for the crop. The same sort of reasoning will apply to the reclaiming of exhausted land. The manure applied to save what is consumed by the plant, is retained on the land, if washing is prevented; while, on the other hand, if the land is permitted to wash, by the end of the year the crop and the washing together will exhaust all the manure that may have been applied in the spring.

More might be said, but I deem it unnecessary. If the arguments already submitted are not sufficient to establish the ground assumed, other arguments would be equally unavailing.

The next point before me is to answer or reply to a few of the most prominent objections to the system, raised by men who admit its utility but excuse themselves from its practice for (to them) many weighty good reasons. One very common objection is, the number of short rows that necessarily occur in the horizontal cultivation—alledging that as much work cannot be done. To this objection I will remark, that on ordinary lying land, there are as many, so much increased in length over what they would be if run directly across the field, that they more than overbalance the short rows. In other words, I doubt whether a horse has to turn as often in the horizontal culture as in the straight, save on very knobby land. But admit that they have, and even one fourth more, what is that compared to the saving of the land?

Another objection is, that the ploughing cannot be as well done on those sharp turns that frequently occur on very knobby ground. I admit the force of this objection; but contend that they seldom occur in ordinarily lying farms. But even this should not deter us from trying to save our land, and supplying the deficiency by a little more hard work at those places. I however, maintain that gradual curves can be ploughed as well as straight rows, and quite as much in the day, and with more ease to the hand and horse, as they are all the time moving on a level.

But again it is objected, that this system requires the constant attention of the owner or manager to have it correctly done, and necessarily consumes much of his time in actual labor, in laying off the land. All of which I admit, without feeling or seeing the force of the objection. "If you want a thing done, send your servant; but if you want it well done, go yourself," is an old saying, and as true as it is ancient. My experience in life has been, that if I had any business well done, I had to superintend it in person. The objection, however, amounts to nothing; because it is the duty of the owner or manager to attend strictly in person to every branch of his business. Therefore he should be there, whether the rows are to be run straight or crooked—to say nothing of the advantage that is to be derived. By way of encouragement to those who make a mountain of this objection, I will remark that several of my fields were laid off by a servant—I being present often enough to give him the start-in points—and the work is as effectual as any on the farm. By way of overbalancing all the objections that have been or can be raised, I assert

it will prevent hilly land from washing, and experience has proved the fact. If higher testimony is wanting, I invite any gentleman who desires it, to give me a call, and he shall have a peactical illustration of the fact.

I now come to speak of the various systems that are intended to supersede the one I advocate and practice. And I might sum them all up together and dispose of them all with the same answer, as they are all liable to the same objection. It might, however, be considered too summary a notice, and not sufficiently respectful; therefore, I will name only a few, and point out their defects.

Perhaps the most common practice is to run the rows on a level by the eye, or take the general advantage of the hill, making turn rows occasionally where the hill makes any material change. Now, it certainly will not be considered necessary for me to enter into an argument to show that neither of these systems can prevent the water from embodying when there is a heavy fall of rain. A moment's reflection will convince all that a level row cannot be run by the eye; and if the row is not level, the water must necessarily be drawn to different points, in consequence of which a body will be formed, the ditch filled up with dirt, and the land washed. The other method spoken of will in many cases bring out the water by the rows from both sides into the turning row; a current is then formed, and a gulley is the consequence, with the filling of the ditch below. I speak advisedly, having travelled over the ground in my early efforts to prevent my land from washing. I therefore assert, without any fear of successful contradiction, that neither of these methods will do.

A more common practice, and very strongly advocated by many, is to run the rows with and parallel to the ditches, beginning below the ditch and finishing with short rows above the next ditch below. The reason urged for this system is, that each row will carry off its own water. Well, this looks very well on paper; but why, allow me to ask, will you be at the trouble of cutting ditches? If your rows are to carry off their own water, you certainly have no use for them, save for the few short rows that would need an outlet for their water. I must be allowed to call in question the fact, and deny that the rows will bear off their own water, save a few of the first. If the fall of the land at all points of the field is the same, a number might do it ordinarily—not more than five or six. Suppose the land at one side of the field falls very abruptly, and at the other very slightly, and suppose the fall of the ditches is from the abrupt side to that which is gradual, you will readily perceive that the water will run the contrary way from the one you intended, in a very few rows from the ditch; because the grade is soon lost by the land falling much faster at one side of the field than the other. But this is not all; the natural undulations of the land would soon destroy your grade, and cause the water to flow to the same row, when a current would be formed, and the shortest direction taken down the hill, increasing in volume as it went, taking with it a sufficient quantity of earth to fill up the ditch below. For the sake of further illustration, we will admit that the rows may be so graded as to bear off their own water, without materially washing the rows, and then the system is objectionable; because the water would take with it all the sediment, and waste the water in hasty showers. This system has done and is still doing much mischief to land.

And again; another method is to so grade the rows that each one will empty its water into the ditch below. But this is subject to the same objection as running the rows parallel to the ditches. The common undulations of the land will be sure to embody the water; and besides this, another objection would be prominent, provided the rows could be so run that each one could empty its water into the ditch, which is, that in hard rains, the rows would carry a sufficient quantity of sand to fill up the ditches, unless they had the favorite fall of my very particular friend, of *six inches to every twelve feet.* Besides this, it would be liable to the objection of wasting light showers, and taking with the water the sediment or finer particles of the earth.

Once more, and I shall have done with this favorite system; and although it is the last I shall mention, it is not the less plausible. Nevertheless, you will find that its utility exists more in the imagination of the author than in reality.

But to the system. First, lay off the necessary inclined ditches; then run about three parallel rows on each side of the ditch, and lay off the balance of the land by a perfect level. The author and practitioner of this system claimed for it that each parallel row would carry off its own water, and that you could cultivate the land better near the ditches, than if you crossed them with the rows. "All is not gold that glitters;" so with this theory—it will not bear the test of examination. It is subject to two objections: first, because in ploughing the horizontal rows, which would be bounded on each side by the parallel rows to the ditches, and would be what is technically called butting rows, you would have to turn round, making your outside parallel to the butting row, and consequently a turning row to the horizontal rows, which would increase the turning at least fifty per cent—already too great an objection with some. The second objection is that there is no necessity for the ditches, for the reason that where the rain is so great as to overflow the water-furrows where the land is laid off on a level, the sheet of water in its downward passage will first reach the rows parallel to the ditch, when the sheet will be broken—the parallel

rows having the same fall as the ditch, the water naturally will take down them, and will never reach the ditch, unless the rain be one of the largest kind. I deny, too, that the land can be cultivated better and more economically near the ditch; because the parallel rows must be at least one half of their width from the ditch, while those that cross the ditch can be cultivated entirely up to the ditch, pains being taken.

I have now, complied with my promise to you of the 15th of June, and respectfully submit the defence for your decision, as well as the system there described, hoping you will give it a critical investigation, and expose its defects, if you find them to exist.

I am undetermined as to which class of your interrogatories I will answer in my next, or September letter; but will conclude in all good time for you to hear from me again in that month.

With regard,
Your most ob't servaat,
R. S. HARDWICK.

Jocassie, Hancock Co., Ga., July 15th, 1847.

THE COW AND THE DAIRY,

BY JOHN S. SKINNER.

Next to the horse, the Cow is justly valued as the most useful animal which man has been able to domesticate and retain permanently in his service. The Ox tribe, of which it is the female, belongs to the order *Ruminantia*, in the class *Mammalia;* these terms implying that the animals ruminate or chew their food a second time, and have *mammæ* or teats, with which they suckle their young. In the Ox tribe there are different genera and species, all more or less differing from each other.

The Wild Breed, from being untameable, can only be kept within walls or good fences; consequently, very few of them are now to be met with, except in the parks of some English gentlemen, who keep them for ornament and as a curiosity. Their color is invariably of a creamy white; muzzle black; the whole of the inside of the ear, and about one third of the outside from the tip downward, red; horn white, with black tips very fine, and bent upward; some of the Bulls have a thin upright mane, about 4 or 5 inches long. The weight of the Oxen is from 450 to 550 pounds, and the Cows from 280 to 450 pounds. The beef is finely marbled, and of excellent flavor.

Of the domesticated ox, the varieties, from the effect of cultivation, are now very numerous. The ox, in one or other of its genera, and for the sake of its labor as a beast of draught, its flesh, or the milk of its female, has been domesticated and carefully reared from the earliest times—in some countries having been raised to the rank of a divinity, or, at least, held as an object of extreme veneration.

The domesticated species of oxen is, in all its varieties, materially altered from its wild parentage. Influenced by climate, peculiar feeding, and training in a state of subjection, its bony structure is diminished in bulk and power, its ferocity tamed, and its tractability greatly improved. Our observations will refer chiefly to the Cow, on which very great changes have been effected by domestication; the most remarkable of these alterations has been in the capacity for giving milk. In a wild state, the udder is small, and shrinks into an insignificant compass when the duty of suckling is over; but when domesticated for the sake of its milk, and that liquid is drawn copiously from it by artificial means, the lacteal or milk-secreting vessels, enlarge, and the udder expands, so as to become a prominent feature in the animal. In this manner, by constant exercise, the economy of the cultivated species of Cows has been permanently altered, and rendered suitable to the demands which are constantly made on it. Yet it is important to remark that those milk-yielding powers are not equal in the different varieties or breeds of cows. Some breeds, from the influence of circumstances, give a large quantity of milk, but of a thin poor quality, while others yield less milk, but of a good rich quality. Whether, then, the cow-keeper wish quantity or quality, is the question for him to solve in making a selection of stock. In general, near large towns, where the demand for milk is considerable, the object of dairymen is to keep Cows which will give a large quantity of milk, no matter of what sort. Private families in the country are more regardful of the quality of the article; they wish a little milk which is good, some fine cream, and perhaps also some sweet butter and cheese; and on that account are more careful in the selection of their Cows. For those who go for mere quantity, and yet have some honest scruples left about resorting to the *pump*, the old fashioned, large-framed, big-boned *Holderness* would do best; while for *cream* only, for family use, no breed can compare, in color and richness of milk, with the ewe-necked, deer-looking, ragged-boned, *Alderney*. This breed may be seen at Roswell House, residence of Mr. Colt, Paterson, New Jersey.

DRIED FRUIT.—Horace Greely, in his letters from Paris, says that nicely prepared dried peaches would find a ready sale in London and other markets, if the article were introduced to public notice. May we not reasonably believe than an enormous business is yet to open to this country, in the way of the culture and drying the very best fruits for exportation, their weight being thus so much reduced as to cost little for transportation?

[From the Scottish Journal of Agriculture.]

THE IMPORTANCE OF LIGHT.

The importance of a good supply of light has long been overlooked, and it has only been within a very recent period that the subject has at all been considered. The result of the investigations on light has proved that a close and intimate connexion exists between it and the performance of the higher functions of animal and vegetable existence. Plant a pea, for instance, in a dark cellar, and what is the consequence? It takes root, and grows, doubtless; but are the shoots it throws out vigorous, and possessed of that healthy green color, the effect of the existence of healthy juices? No. Pale and sickly, the plant droops—growing still, but never arriving at fructifying maturity. As with vegetable, so with animal life. In many of our large towns are dark cellars and rooms, lanes and alleys, into which the glorious light of day never enters, and which are inhabited by wretched beings—the grown up, pale and sickly; the young, stunted and deformed. And not the less marked or decided is the state of things in this respect, as witnessed in the country districts—windows few in number, and so miserably deficient in size that all the light admitted only serves to make "the darkess visible." To one who knows the effect of light upon health, such specimens of ignorance on the part of our cottage-builders is calculated to give extreme pain.

Mr. Ward, of London, has been instrumental in drawing much attention to the influence of light upon health. In his examination before the Health of Towns Commission, he stated that during a practice of thirty years in a densely populated neighborhood, his attention was repeatedly drawn to the influence of light, not only as a most effieient means of preventing disease, but likewise as tending materially to render disease milder when it occurs, and more amenable to medical and other treatment. And he also gave the following remarkable illustration: Dupuytren, a very celebrated physician of Paris, mentions the case of the lady whose disease had baffled the skill of several eminent practitioners. This lady resided in a dark room into which the sun never shown, in one of the narrow streets of Paris. After a careful examination, Dupuytren was led to refer her complaint to the absence of light; a removal to a cheerful situation was recommended, and was attended with beneficial results, her disease completely vanishing. Dr. Edwards instituted a set of experiments, which serve to show the importance of light. He proved that if tadpoles are nourished with proper food, and exposed to the constantly renewed contact of water, in order to maintain their beneficial respiration, but entirely deprived of light—although they continue growing, their metamorphosis into the condition of air breathing animals is arrested, and they remain in the form of large tad-poles. It is during childhood that the evil effects of want of light is most directly influential in acting injuriously on the full physical developement. The strength and constitution of the man is very much dependent on his early rearing during childhood. Whatever stints the growth of a child operates on his physical capacity for labor. The want of light exercises another influence worthy of being noted—a moral one. This is so self-evident that the statement scarcely requires a proof. The more dark corners you have in the dwellings of the poor, the greater amount of filth and dirt, and their sure concomitants, we may add, carelessness and disease. There is every inducement in an ill-lighted house, for the inhabitants to become careless and indifferent as to personal and household cleanliness.

[From the Albany Cultivator.]

THORN HEDGES.

As our woodlands are getting short of wood for fences, it is time for us to be looking out for something more durable. I have thought about thorn hedges, and I may give your readers some information on the rearing and planting of these hedges.

The seed are gathered from the thorn in autumn, and mixed up with dry earth; through the winter, (this is the manner in Scotland,) and in the spring, they sow them broadcast in beds; the first year part of them come up and grow through the summer, when they are transplanted in the spring in the nursery; and for two succeeding years they sti'l come in the beds. They then let them grow two or three years before they plant out into hedges, when the nurseryman puts them into bunches of one hundred each, and cuts the small tops and roots off, and they are ready for planting. There are various ways, sometimes on level ground, but the common way is in ditches. We will take that way. Say the fence is to be made alongside of a road—the men employed to be provided with a spade, a shovel, and pick or mattock—the latter being necessary when the ground is hard and stony. The first thing to be done is to set up two sticks, one at each end of the ditch; then set in two or three more in a straight line, and stretch the line along the stakes; then, with the shovel, (the shovel is such as those they call the Irish shovels, only a little larger, and the handle no longer than a spade handle,) the line being stretched along the stakes, he turns his face to the road, and cuts along the line with the shovel, sloping back considerably; then turns back and cuts the other way, at about a foot from the other line; next he cuts across the sod and turns it over, but keeps it back about four inches

from the lip of the ditch, so that it forms an offset called the water table. They then shovel some of the best soil from where they took out the sod, and level it all off ready for the thorns. Then take a bunch of thorns and lay them on a level, with the roots into the ditch, with their tops hardly out of the edge of the sod, so that they will not be hanging by the roots when the frost moulders away the earth. They are laid about three inches apart. This done, they shovel out of the bottom of the ditch on top of the thorns, until the ditch be two feet, and sometimes more, deep. They then clap all along the face of the ditch, to make it solid and compact. It is then finished with the exception of the fence. The fence is made by driving stakes on the top of the ditch, four to the rod, and nailing on two boards, three or four inches broad.

I have been a long time in this country, and have had an opportunity of trying experiments, and I find that thorns from the old country do not thrive well here. Whether it is owing to the climate, or the snow lying on them so deep in the winter, I do not know.

I am now about to make some inquiry among your readers, as to how the thorn in this country would do. I have read your *Cultivator* several years, and I do not remember to have seen anything with respect to that, except the Osage Orange hedges, and that yet remains to be proved. Will you please inform, through the columns of your paper, whether any one has made the experiment, and how they have succeeded, and how they planted? ROBERT SHELL.

[From the American Agriculturist.]

INEXHAUSTIBLE SUPPLY OF GUANO.

Many of our farmers have been deterred from making use of guano from an apprehension that the supply might fail, and that so powerful a stimulus would injure the soil, unless the same substance could be annually applied. Erroneous as this last notion is, it will perhaps be more or less entertained, until repeated experiments shall have shown in this country, as in others, that its tendency is permanently invigorating.

The fear that there will not be found an ample supply on the coast of Peru *alone*, for the wants of Europe and the United States, will cease with those who can give credit to an official report made to the Peruvian government in 1842, and published at Lima, under the authority of the Treasury department (*Ministerio de Hacienda.*) This report gives the result of a survey made by order of the Peruvian government, of the three islets near Pisco, in latitude about 14 deg. south, called the Chinchas, where is found *one* of the *many* deposits of guano which abound on the coast of Peru and Bolivia, to an extent of 800 miles. The surveyor, after some remarks upon the nature and origin of guano, states, that from admeasurement, he found the superficial extent of the deposits on these three islets to be 1,554,406 square varas (the vara is computed at 33⅓ inches, English;) and the depth to vary according to the irregular surface of the rock upon which it is based; but making liberal allowance for the points of rock rising above the bed of the general mass, he calculates an average depth of 60 varas, which gives the sum total of 93,264,360 cubic varas. The report adds, "the cubic vara of guano as found in these deposits weighs more than half a ton; but taking no account of the excess, we have here 46,632,180 tons, which if extracted at the rate of 50,000 tons per annum, would last more than 900 years; and valued at $50 per ton, amounts to $2,331,609,000, a sum such as no mine has yet produced."

Making every reasonable allowance for errors of survey, and over estimate of depth, I think here is abundant evidence that Peru, from these islets alone, can supply the world with guano for many generations. EDWIN BARTLETT.

New York, May 12, 1845.

TO FARMERS' BOYS—A HINT.—The writer of these remarks was once a farmers' boy, and speaks from experience when he recommends all farmers' boys to keep a daily register of everything interesting coming under their observation, relative to their business. The time of planting or sowing crops, with the results of late or early planting appended; the effects of any peculiar mode of manuring; the benefit or detriment from thick or thin sowing; the kind of seed; the time or manner of harvesting; the results of draining, of deep or shallow ploughing, and of numerous other matters—especially including the cost and profit of each crop—if accurately recorded, would not fail to yield a great deal of interest as well as usefulness. The time of the appearance of birds and insects, the flowering and fruiting of trees, or anything else in relation to nature and its productions, would assist very much the acquirement of knowledge on these subjects, if made a matter of record. I am sure it would be a delightful employment, both at the time, and by its examination afterwards.

Now, all that is necessary is to get a small blank book, with a flexible leather cover, which may be had for a dime at any book or stationary store, and rule each page into two columns —the first for the record of planting, sowing, and all other operations during their earlier stages and the second column for the registry of the results, directly opposite, on the same page. By comparing these results with the operations that produced them, a great deal of valuable practical knowledge would be obtained.

Another advaniage might result from this practice. When any operation was deferred till too

late, and loss was occasioned thereby, make a memorandum of this fact at the proper place in the second column, by the examination of which the second year, this difficulty might be avoided. Many failures occur from a want of seasonable attention; such a journal would therefore leave an excellent memorandum book to refer to daily the second year, or any other year afterwards, to remind one of what must be done at the time.

Would not this be worth a thousand times its cost, by way of making accurate, intelligent, practical and successful farmers, of lads and young men in the country, besides improving their knowledge of writing?—*Alb. Cultivator.*

[From the Albany Cultivator.]

ANALYSIS OF SOILS AND PULVERIZATION.

Our readers are aware that we have always urged the insufficiency of simple analysis to determine the real value and productiveness of soils. Ingredients must not only be in sufficient quantity, but must be in such a state as to be *accessible* to plants during their growth. Nitrogen, for example, is admitted to be of the greatest importance to growing plants, yet every plant in the world grows in an atmosphere consisting of four-fifths of this ingredient in a free state, without being in the least benefitted by its presence; while the infinitessimal portions carried down as ammonia by the descent of rain, are eagerly caught and assimilated.

A late number of Silliman's *Journal* contains an analysis by D. A. Wells, of the soils of the best "bottom land" in Ohio, strongly corroborating this view of the subject. One specimen examined was from a field which had been planted successively for eighteen years with corn, and had continued to yield without diminution, seventy to eighty bushels per acre. Another soil examined had been cultivated fifty-one years, with forty-five crops of corn, and two or three of wheat, with scarcely diminished fertility, yielding now eighty bushels of corn per acre. And yet D. A. Wells informs us that these soils, "yielding with little or no culture, from seventy to eighty bushels per acre, *are no better, so far as their mineral composition is concerned, than many of the Massachusetts soils which have a reputation for sterility.*" The question immediately arises, to what do they owe their extraordinary productiveness? Doubtless, in a considerable degree, to their large portion of organic constituents, but mainly, in the opinion of D. A. Wells, to the *fineness of their particles.* In commencing their examination, it was found that sieves ordinarily used would not answer; those were therefore procured which were made of the finest gauze, the largest meshes of which, by accurate measurement, did not exceed *one sixtieth of an inch in diameter.* One hundred parts of several specimens of soil passed through this sieve, left a coarse residue of from one and a half to seven parts, and this residue was partly vegetable fibres and undecomposed organic matter. "This remarkable comminution of particles gives at once a clue to the secret of their great fertility. With this fineness an increased power is given to a soil for the absorption, retention and condension of moisture, carbonic acid, and ammonia, an opportunity for the free permeation of atmospheric air, a facility to the rootlets of plants for extension, and consequently increased facility for receiving and appropriating nourishment." This is proved in a remarkable manner by the double and often triple crops obtained from thoroughly draining a wet soil, without the least alteration in its composition; and also by the utter uselessness of coarse manure badly mixed with earth in a dry season.

[From the Agriculter.]

GUANO *vs.* MANURE AND MARL COMPOST.

Mr. Coggins, who works on shares a farm belonging to Henry P. Havens, near to Port Washington, New Jersey, made a most conclusive experiment of the value of Guano the past season. Not only did he prove the intrinsic value, as a fertilizer, of Guano itself, but that it is superior to any other manure at the same cost. He manured his potato crop with twelve loads of compost, made of equal parts of good stable manure and Middletown marl—a good fertilizer, though not quite equal to the Squankum marl. Failing in his supply of compost, he procured guano to finish his field, and applied 250 lbs. per acre, unwittingly in the drills with the seed, by which one-twelfth was destroyed. Now for the result. Do you expect you will be satisfied if the guano produces half as much as the manure? as we suppose that is about the ratio of cost. Of course none of the advocates of old systems will expect more. Will they believe the fact that the manured portion of the field yielded ten barrels per acre; and the guanoed portion twenty-two barrels, of a quality so much superior they brought $2 a barrel, while the others brought $1 75; making a difference in favor of the guano of $26 50 per acre, notwithstanding a loss of one-twelfth of the seed from want of information how to use the guano.

Mr. Coggin remarked, "it would have been better for me if I had thrown away the manure and never dug the marl, and had purchased and used guano upon all my crop." And so it would; and yet we cannot recommend such a course altogether. We do recommend, however, buying guano in preference to any other

manure. We do know it is more economical to buy and use guano than it is to dig and haul marl; and much more so than it is to haul street manure, even if it could be had within a mile of the place of using it, for nothing.



American Cotton Planter.

MONTGOMERY, ALA., FEBRUARY, 1853.

N. B. CLOUD, M. D., EDITOR.

Our Agents.

WM. STRICKLAND, Book-seller, No. 28, Dauphin street, is our agent in Mobile, who will receive subscriptions and furnish the paper to subscribers.

MR. AMOS TRAVIS is our agent at Gainesville, Sumter county.

G. M. REYNOLDS and Mr. TURNER are our travelling agents.

☞ Our exchanges and correspondents will please observe to direct any matter for the *American Cotton Planter*, to N. B. Cloud, Lockland P. O., Macon county, Ala., till further notice.

☞ Our subscribers will take notice, that as our terms are invariably cash, the receipt of the journal is the best evidence that we have received the *dollar*. Any subscriber, having ordered the paper in compliance with the terms, will confer a favor, should it fail to reach him, by informing us at once. It will readily perceived that this arrangement will save much unnecessary trouble, and be entirely satisfactory.

☞ It will be observed by the merchants of our cities and large towns, and the mechanics and manufacturers of the country, who would sell to the planter, that the *American Cotton Planter* affords a fine opportunity for advertising. Its circulation is mainly among the consumers of their wares, and its form and neatness of style such as to secure its preservation.

☞ Our friends will perceive, by the receipt of this, the second and February number of the American Cotton Planter, that its publication is a fixed fact. We have not yet received the number of subscribers necessary to sustain the publication, we have, however, received such encouragement from the friends of the enterprize, in the various sections of the country, as to induce us to go forward with the work. If the cotton planters of the country, and especially of Alabama, wish a publication of this character, a bold and fearless advocate of our own peculiar industry, a caterer for the common good, —neatly and tastefully arranged, and equal, in all respects, in its mechanical execution, to the oldest and best agricultural publications in the country,—it is only necessary to furnish a subscription list sufficient to sustain it. We ask no more,—not a picayune, for our attention and devotion to this home enterprize.

Those persons holding subscription lists and others who have interested themselves in procuring subscribers, will please forward at once, that we may have the names and send forward the paper. The cash system will be strictly observed and adhered to. No name will be entered on our book, or the paper sent, (except as a specimen,) unless the money accompany the order.

☞ We avail ourselves of this early opportunity, to disabuse the apprehension expressed by some, and, perhaps, entertained by others, that our journal, as its name might seem to import, is to be devoted exclusively to cotton and its improved culture. We had to have some name, and we selected that of "American Cotton Planter," because we regard the production of cotton as an object of the very first importance among men. And though we intend to furnish our readers with all the information we possess, and may be able at any and all times to collect, that will add to the value of this industry, we shall not, for a moment, loose sight of the cereal crops and their improvement,—an object of vital interest to the success of the Cotton Planter.

In our horticultural department we hope to interest and enlist the taste of the ladies of our country, with the gentlemen amatuers of the beautiful and useful. This subject, too much neglected in the Southern and planting States,—

the natural home of flowers and fruits,—we intend shall have much of our attention, in all the several departments of floriculture, fruit culture, landscape gardening and vegetable gardening.—If we would endear home, "sweet home," to ourselves, to our sons and daughters, we must embellish home with the beautiful and fragrant flowers, the cheerful evergreen and the twining vine. With this culture we are anxious to see introduced and displayed the true artistic taste, that all the sacred, hallowed influences of the homestead may become indellibly stamped upon the youth and rising generation of our country. In short, we intend to make the "American Cotton Planter" a cabinet of useful, practical information on all subjects that appertain to the industry and improvements of our people. That we may be able to accomplish an object so desirable, to make this journal acceptable to all,—to vary and diversify its pages, we solicit the aid of our friends,—ladies and gentlemen;—to contribute to our columns.

☞ We cannot permit this number of the Cotton Planter to go out, which announces to its several friends and the planters especially of Alabama, the fixed and determined publication of an agricultural journal in this State, devoted to the best interest of the planter; without giving expression of our sincere thanks to the many kind friends who have interested themselves in extending the circulation of our paper. To all, we wish a prosperous future in fruitful crops and improving farms at home. We cannot, however, resist the temptation in this connection, of particularizing one of the many instances of disinterested public spirited industry in behalf of this enterprise. We allude to our friend, Dr. J. F. Dortch, of Wilcox county, who has furnished a list of near 150 subscribers,—most of them from that county. If twenty other gentlemen in the middle counties of Alabama, should determine to give the enterprize the same interest, we should be quickly relieved of all apprehension of success. Are there not so many that will determine with us, that the "American Cotton Planter shall succeed?

The Southern Agriculturist is the title of a new paper to be commenced shortly in S. C., edited by A. G. & W. Summer. Success to it.

☞ We call the attention of our cotton planters to our first article in this number, on the analysis of the cotton plant and seed, by the late Mr. Thomas Summer. Mr. Summer was a Southern man, raised amid the cotton fields of the South—a thoroughly educated man, and in the science of chemistry, was taught by the great master of the art, Liebig. The technicalities and abreviations, difficult to be understood, should deter none from the careful examination of this article. We shall soon give an analysis of Indian corn, wheat and the best of fertilizers, when the value of this article may be appreciated. The day is at hand when these truths must be known and understood by those who would succeed in the economical and profitable culture of our crops.

STRAWBERRIES.

Our readers will find in this number of our paper, under the Hortcultural head, a most excellent practical communication, by an amatuer of this delightful fruit. Mr. Peabody, too, is in our midst, with a fine supply of his acclimated Hovey's seedling,—a rare opportunity for our friends to commence the cultivation of the strawberry as it may and should be done. Who will neglect longer to have strawberries and cream all summer?

THE PLANTERS' LEVEL.

In this number of our journal we conclude the admirable treatise of Mr. R. S. Hardwick, upon the practice and the philosophy of his system of side-hill or grade ditching and horizontal culture. For the convenience of those of our planting friends who may wish or intend to avail themselves of the advantages of this system of improvement, the very first and most important step in plantation economy, we have obtained from the author a true draft of his instrument, which we have had engraved by our fellow-citizen, Mr. Swan, and which will enable any planter, that can manage tools at all, to construct a perfect "Planter's Level," with the directions so minutely detailed in the January number.

We need not add anything by way of commending the superiority of this system of protecting land, as the philosophy of the author, in this number, is incontrovertible, perfectly. And then the ease, rapidity and perfection by which

the work may be done, with an instrument so easily constructed—simple and perfect in itself—leave not the vestige of an argument why any and every cotton planter should not avail themselves at once of the advantages of the system. We have the maiden soil of the very best planting State in the Union, fresh and new; why, then, with the living, practical examples and the advantages of the system, as realized in the hands of those who have adopted the system in portions of the older States, shall we not all, as wise and patriotic Alabamians, determine that no more ugly gullies or washes shall deface or waste our fields? With this perfect instrument any character of rolling land may be graded, with grade ditches, and the rows horizontalized, not only to the perfect security of the land, but by leveling the culture, very much is gained to both hands and teams in performing the work of the crop. Then, again, to attempt a system of permanent improvement, upon undulating or rolling land, without first adopting a system of grade ditches and horozontal culture, is like the nursling story of the frog in the well, that "climbed up two feet in the day and fell back three at night."

You may manure and fallow it, and loose it up by the best of culture, but like the slacked and pulverized earth on the sides and margins of gullies, it only facilitates its precipitation, by the next fall of rain, into the branch. But the use of this instrument not only retains the soil in your field, but it retains the shower of rain, laden with the ammoniacal gases, washed out of the atmosphere on the soil where it falls, to feed your crops and make rich the land.

THE SOUTHERN LADIES' BOOK.

We take pleasure in calling the attention of the young ladies and gentlemen, and indeed, all admirers of the fine arts "in the sunny South," to the SOUTHERN LADIES BOOK, just commenced and published in the city of New Orleans. It only needs the warm friendship and patronage of the South, to make it equal to any of the monthly magazines in the country. W. T. Leonard & Co. Proprietors, No. 103, St. Charles New Orleans. Price $3 00.

TO KILL LICE IN POULTRY.—Boil onions, thicken the water with meal, and feed to the poultry.

HORTICULTURIST.

Our young friends, who desire to cultivate a taste for the beautiful with the useful, will be pleased to learn that the HORTICULTURIST, established by the late and lamented A. J. Downing, Esq. is to be continued in all its native sprightliness at Rochester, N. Y. edited by Mr. P. Barry and published by Mr. James Vick, jr. at the very low price of two dollars. The January No. we have received, beautifully embellished and filled with a great variety of original and select matter on horticultural subjects.

DIRECT IMPORTATION OF GUANO.

Our Alabama Planters will observe, by reference to the advertisement of Mr. T. Affleck, in this number, that by means of his agency and the direct importation of Guano, from Peru, into the port of New Orleans, this valuable fertilizer is to be afforded there at from eight to ten dollars less per ton than we have had to pay for it heretofore in Mobile. We are gratified to announce this public spirited movement on the part of Mr. Affleck. We have written him on the subject, and shall spare no pains to have an agency established in our own port, Mobile, for the sale of guano. The saving of ten dollars per ton is something of an object, but the guaranty afforded by such agency in its direct importation, to those who purchase, that they are getting a genuine article of Peruvian guano, is an object of vast interest.

Our friends will also perceive that Mr. Affleck's Rural Almanac is to be had in most of the large towns of our State. Our planters will find that this little work, besides answering all the purposes of an almanac, furnishes a great fund of useful information on all subjects connected with the farm, garden and orchards.

Also, his plantation books for the convenience of the planter and overseer. And again, we would remind our friends, that Mr. Affleck is the proprietor of the Southern nurseries, where every variety of good fruit trees may be had.

By stabling and shedding stock through the winter, a saving of one-fourth of the food may be effected—that is, one-fourth less food will answer, than when such stock may be exposed to the inclemencies of the weather.

Cotton—Its improved and true Culture.

No. 1.

In the first, or January number of this journal, we have furnished its readers with a concise, comprehensive and interesting history of the Cotton Plant—and we think, not inappropriately. From this memoir, we derive at once, in the beginning of our enterprize, all the information that is important to the American planter in a historical point of view. While we may be surprised, in contemplating this subject, at the slight interest, seemingly manifested in an article, that we now know to be of such paramount importance, by the inhabitants of the old world, who were acquainted partially with some of its uses for centuries previous to the Christian era, there is, nevertheless, in such contemplation, a feature of gratulation in the reflection, that it has been reserved for the Anglo-American to develope the true value of cotton to mankind. Whatever may be the difference of opinion among planters, as to the causes producing the much complained of fluctuations in the market value of cotton, or as to the means by which these fluctuations are to be obviated, there is a remarkable uniformity of opinion among all classes of men, as to the importance of our cotton, both commercially and nationally. The power and influence which it has acquired over the commerce of the world in less than a century, is comparable to nothing but the fabled story of the young Hercules. It is indeed, not only the controlling influence of commerce, but it is emphatically, the barometer of commerce,—determining by its buoyancy or depression in the markets of the world, the value of all other industrial interests or productions,—even breadstuffs, the very existence of man, obey the influence of American cotton, beyond the stern pressure of necessity itself.—Its national importance consists in the problem yet to be demonstrated,—whether or not cotton can be successfully or profitably grown without the cotton region of the United States, by any labor at all, and certainly not by free labor. There are, however, other features of value, sketched dimly, it may be to some. in this grand developement, but to the far-seeing, who look upon the destiny of this noble plant, beyond mere dollars and cents, these features appear distinctly and grow in importance. The extraordinary influence that our cotton has exercised in facilitating an intelligent, liberal and permanent civilization of the inhabitants of the earth, during the last half century, clearly designate it as the true civiliser of man. Again, the obvious and unmistakable influence that our cotton has had in promoting the peace of the world, shows it at once entitled to the importance of the great pacificator of mankind. Then again, as an element of political economy, our cotton, connected with our peculiar labor, which is alone capable of producing cotton extensively, successfully and profitably, is evidently the true conservative and sustaining power of this great and best of governments.

This is the true and appropriate view, that it is altogether necessary every American cotton planter should take of this peculiar interest and production. There is no doubt at all, but that the prolific source of all the evils and disadvantages so prejudicial to the planter's interest in the commercial value and sale of our cotton, has been the careless and underrated valuation, almost, indeed, no valuation at all, which the planter himself has placed upon Cotton. It is on this position we place ourselves, and it is for this position we intend to do battle, so long as we are able to serve the productive industry of this country, *viz:* that it is the planter alone—the intelligent, practical, industrious producer of Cotton—who is competent to fix the valuation of Cotton.

These several predistinguishing traits of our peculiar industry, we shall discuss in the order in which they stand, after treating, as we are constrained to believe from practice and observation, of the *improved and true Culture of Cotton.* We intend to conduct it, in a series of short monthly numbers, in a bold, frank and candid manner, asking only the respect for our opinions and the positions we may assume, which we shall at all times most willingly accord to the opinions and positions of others—a fair and candid consideration.

In the practical part of this discussion, we intend to furnish our readers with a synopsis of field notes, derived from a practice of twelve years, carefully conducted with a view of determining a system of rotation and shift of crops, adapted to the wants and true interest of the American Cotton Planter. We intend to go into all the minutia of the subject, from the collection of the material, preparatory to making compost manures, to the closing process of collecting and preparing the Cotton for market.

As the columns of the *Cotton Planter* will be open and free for all, we invite our planting friends, as a special favor to the cause of improvement in the plantation economy of our country, to contest every inch of ground that we may attempt to occupy, which they, in their judgement, may believe to be contrary to sound philosophy, or the true interest of the planter. We feel ourselves deeply interested in this important subject—the growing of American Cotton—and we regard it as truly a matter of the first importance that the true system and mode of culture should be at once ascertained; by which we mean to be understood that system of plantation economy and practice under it, in the production of Cotton, that shall yield the greatest amount of Cotton, at the least possible expense in labor or soil. There are few planters perhaps that fully appreciate this extraordinary industry.

In 1819, just one third of a century ago, our State, (Alabama,) the first new cotton State, was admitted into the Union. At that time the crop of the United States was, in round numbers, 500,000 bales, and now the crop of Alabama alone is 560,000 to 600,000! nor will it be 33 years more before the crop of Alabama will number 3,300,000!—the probable crop at this time of the United States. Nor shall we then have attained the maximum of our capacity for producing Cotton. This is no idle speculation, but the result of actual, practical demonstration.

Plantation Economy.

EDWARDS, MISS., Jan. 1852.
No. 2.

DR. N. B. CLOUD,

Dear Sir: That Agriculture is, and should be, the important matter which should hold in subservience human action—religion and christianity ever excepted—it being the thing for which we were made, no man will deny; nor that it is the great subject towards which thought and action should tend, all other pursuits being only exceptions to the axiom. Admitting this in its length and breadth, I do not think that manufactures, commerce, &c., should be neglected by any people. Nor because I allude not to education in its fullest sense, do I think it should hold any second rank. For us to have the entire benefit of agriculture, education should hold a very high rank. That we may use our education and our energy to the best advantage, we should encourage mechanics, and thus call into action manufactures and commerce.

Though I regard agriculture as more essential as it is the primitive calling of man, yet I do not wish to make all other business pay tribute to the agriculturalist, further than that mutual dependence which the human family should encourage towards each other. The mechanic is far too near a friend to agriculture to give him any secondary position. Without the manufacturer we might make out, but with him we will flourish; and, therefore, he is a partner in trade. Again, without the commercial man, we may exist as the Indian; but with him all other callings are made to progress to a much higher niche of improvement than without him; and thus we find so intimate a relation, such a bond of union—so great a dependence—that we dare not draw the line of separation; therefore, as an humble member of the agricultural family, fully and voluntarily I offer to strike hands on the altar of my country's glory, and say we are equal.

I would therefore recommend to one and all of my fellows (equals) to endeavor to encourage the one and the other. To be a great and happy people, I believe it to be our duty to encourage as many branches of manufacture—including all the mechanical arts—as may be in our power. At the same time, I cannot see why I should not, within myself, do something. To illustrate: I think I might, on my own farm, make my hoe and axe handles, without its being said that I oppose the carpenter. If a paling fall off the fence, I need not send for a carpenter to drive two nails. My chief business should be agriculture, but I can at times do much which is neither plowing, hoing, clearing or fencing.

I would not condemn the carpenter who made sweet potatoes, or who raised pigs, and should sell what he did not want; yet I think if he has work to do he could better follow his calling at $1 per day, than to work potatoes 10 days if he can save $5; yet, even then, it is his own affair.

A few years since, a very kind hearted gentleman, whom I knew when we were almost 30 years younger, was on a visit here, and when he saw a pile of motes in my gin-house, he asked me what I was going to do with them; to which I remarked, that I would put peaches up in them, if I concluded to send any to market. He then said that I ought not to waste them, as they could be sold for three or four cents a pound, and thus, though I made but little, I would be assisting in commerce and manufactures, as the motes were used in paper-making. I did as he directed, but was not paid for expense and labor. Just so, do I feel, should be our action; for though a sheep-skin or a cow-hide is worth but little, yet they will add to home industry; and if paying for labor, they should be preserved.

I do not think we should do our whole duty if we were to make all we could and sell as much as possible—using the least, and spending no money but to buy land, negroes, mules and such things, which would enable us to increase our income, that we may buy more property. Much rather should we encourage, to an extent not injuring ourselves or family, all other callings.

That individual who pushes everything to make the largest crop, and has to buy all necessaries, would do better for his own family if he would make a less crop, and more of the necessaries. Thus, though he might have less to buy with, he might have more clear cash, as having less to buy; and in that way contribute to keep prices at a healthy standard.

When there is a great demand for pork, (meat I mean,) prices may advance as now to so high a rate as to induce men to stint their operatives. So with corn, &c.—"and so with cotton," says somebody, which I admit. I only desire that the prices of one—of all—should be kept at a healthy standard, where the industrious and prudent man will be paid for his labor, and all men be able to purchase meat, bread and clothing. Cotton advancing to a high price, does as much, if not more evil, than if the price was below a fair remuneration. To retain that just medium, it behooves us to keep all departments from unduly sinking or advancing. And thus it is imperatively necessary that we vary our labor, provide well for home and contribute our mite towards supplying man, beast and land with the necessaries.

With respect, yours &c.

M. W. PHILIPS.

SALT AS MANURE.—The Editor of the *American Farmer* says he has tried lime and salt, brordcast, upon part of a field of corn, the remainder of the field being treated with lime alone. Both parts had been well manured, and yielded well; but the part salted continued moist throughout the season, the other suffered much from drouth.

☞ The subjoined letter from Doctor PRICE, of Marengo county, will be read with interest, though describing an experiment, which, for the time being, at least, has proved rather a failure. We were quite interested in attentively listening to an explanation of this theory for continuing the fertility of our forest lands, from Dr. Price himself, during a few days last fall, when we had the pleasure of his company.

This will be found a near approximation of a practical illustration of the Baldwin theory, of enriching lands by shading it,—other than that, I believe that Baldwin insists upon it, that the true *modus operandi* of manuring, consists in the capacity possessed by the fertilizer applied to the lands to shade it. We are very much in hopes that the public spirit and enterprize of Dr. P. will induce him to give this plan a fair and thorough trial; there is certainly very much of plausibility about it. There can be no question as to the fact, that if all the vegetable matter of our forests could be retained upon, and rotted on the land, thus converted into fit aliment for corn and cotton, without incurring too great expense in the operation, that the increased fertility and last of the land would be greatly perpetuated. If it shall be found, upon a clear test of this plan of clearing land, that its practicability lies within reasonable bounds of expense,—this, in connection with a proper system of horizontalizing, and then conducting our planting operations under a judicious system of rotation of crops, it will be an easy matter, with such advantages in the beginning to keep up the maiden fertility of our fields.

PRESERVING FOREST GROWTH.

OAK FOREST, Marengo co., *July 1st*, 1852.

DR. N. B. CLOUD,

Dear Sir: Your favor is at hand, asking for my experience in preserving the forest growth to be used as a restorative for lands, during after cultivation, which I will give you, with the reasons for engaging in the experiment, and why I abandoned it.

The position from which I started was, that nature's greatest efforts were directed to the restoration of inequilibriums or lost balances in her works, and their prevention. Hence I assumed that there was as much of the nourishment for vegetation expended annually in its growth and sustenance as was retained. From this reasoning I inferred that if it was possible to return all that had grown out of the earth into it, and make crops during the process, that its value would be doubled, from the decomposition and shade furnished by the material, which is usually submitted to combustion, as a means of getting clear of it, and thus destroying more of the essential ingredients for crop-making, than will be put on the land from without in fifty years, or probably in all time to come. With such philosophy you will not be surprised at my engaging in the experiment. I selected for the purpose a plat of ninety-four acres, thirty-four of which was cleared in the usual way, and the time required to do it noted; the remaining sixty I had thoroughly grubbed, and in felling the timber, regard was had to the future direction of the rows, throwing as many as was convenient in that direction, to save labor in rolling. This being done, the rows were designated by tall stakes, at distances of twelve feet. Four hands to the row placed such timber as they could handle into line; after which the remaining logs and brush were brought up, having the brush backed so as to render the mass as compact as possible; then, with the hand-rakes, I had all of the litter that was in the spaces placed on or near the line of timber. I found, although a dense forest, the timber did not occupy more than three feet generally. I planted two rows of corn between each of the rows of timber, two feet in the drill and four feet between the rows of corn, which gave as many hills as if the entire ground had been planted six by two feet, which is my favorite distance on new ground. The time of preparing the land for planting was noted, and I found that it and the labor was less than in preparing the thirty-four acres.

There was no difficulty in cultivating with the plow, the foreign growth put up to no greater extent than was anticipated, and I made some corn and peas. Last winter, which was the first after the experiment, I set about having the timber and brush removed to the surface which had been cultivated, to avoid the shrubbery that put up last season. After removing a number of rows, being greatly averse to doing a losing business, or prosecuting any experiment that might cost too much, and finding that the timber did not make as dense a covering as I expected, in consequence of decay and breakage, I came to the conclusion that the weeds and grass would put up through it and give trouble; and being averse to that likewise, I directed my overseer to burn off, which it did finely. This is not exclusively an experiment. There was an elderly planter of my acquaintance in South Carolina, who cleared all of his land by making large piles of the timber and brush, without regard to order; and to illustrate the advantages of durability and productiveness arising from it, I will furnish you with the testimony of one of the servants who cultivated it. He was hoeing in this odd field of good corn and promiscuous piles of timber, when a stranger was passing,—the novelty attracted his attention, and called to the servant to know whose field it was? Sambo replied "we neber buy corn here;"—continuing his work, the stranger repeated his inquiry.—Sambo raised his head and returned the same re-

ply. The patience of the stranger being taxed, he vehemently said "that is not what I asked,—who's field is this?" Sambo replied again, "we neber have bought any corn here." The stranger concluded that it was a good plan to save the land and get good crops, leaving this he passed on, believing that this was worth more than the name of the proprietor.

My confidence in the value and practicability of returning the forest growth to the earth from whence it grew, as a restorative and as a preventive to washing away, is not the least shaken.—An additional reason for this experiment, is the certainty of fresh lands to produce fair crops of cotton, and the belief that the decay and shade afforded by the forest growth, would perpetuate this quality in land.

With my present views, I will resume the experiment, (making some modifications,) at some future time, of which I will advise you. If you think these thoughts, with a history of my failure, will induce some more practical and persevering planter to engage in the task of making lands of double value without any additional material, you can use this as you may think proper.

Accept my best wishes for your own and the success of the American Cotton Planter.

WM. S. PRICE.

[For the Cotton Planter.]

DR. CLOUD,

Dear Sir: I take pleasure in complying with your request of an article from my pen, relating to the culture and manufacture of the Arrow-Root.

In botany, this plant is called *maranta*, and there are several varieties of it; the one that is cultivated for its starch is the *maranta arundinacea*, and though evidently a tropical plant, does well in latitude thirty-two; and I am told that it is indiginous of the Southern part of Florida, below twenty-seven degrees of latitude.

In the summer of 1851, while on a visit to the mountains of Georgia, I met with Mr. Stephen Clay King, of Wayne county, Ga., who gave me an account of the culture and manufacture of the arrow root, and expressed the opinion that it would do in Montgomery, Ala, and kindly offered to send me some of the seed which he did, and in April, 1852 I received and planted what he sent me. My success was very gratifying to me. From two rows, forty feet long, in my garden, I raised five bushels of the tubers and from it we made seven pounds of pure starch, and saved all the small tubers for seed.

As far as I am able to judge, the arrow root has but three articles in its composition,—woody fibre, starch and mucilage.

In its manufacture, the tubers are pounded in a trough or mortar, to a pulp; it is then put into tubs and water added plentifully, after which the process is pretty much the same as that pursued by country ladies in making starch from wheat bran, only that the whole operation may be completed in a day. The culture is the same as the sweet potato, and the keeping the seed the same.

A part of my arrow root seed I put up in cotton seed, and of this I lost nearly all. A part I put up in earth as I do my sweet potatoes,—this keeps well; and I hope this crop to be able to distribute largely of it to my friends next fall.

The arrow root is a delicate plant, and we are most too far North for its profitable culture, but we can raise our own supply, and it is a valuable article for culinary purposes.

Your ob't serv't,

E. A. HOLT.

Montgomery, Ala. Jan. 15, 1853.

Marl—Its Value and the Quantity to be applied.

We received a letter some time since from D. K. a subscriber of Camden, Wilcox county, requesting us to state, through the pages of the Cotton Planter, the best mode of using shell marl, and the usual quantities applied on clay and sandy land. As this is one of the leading objects of this journal, it will afford us great pleasure to furnish our friend, D. K. and such others as may desire it, the necessary information on this very interesting subject.

"Marl is a mixture of earths containing a large amount of mild lime. It is clayey or argillaceous when it has the mechanical characters and touch of clay,—sandy when silicious, and calcareous when almost entirely composed of mild lime; it is also shelly, when full of fossil shells. The richest shell kinds are best, as they contain bone earth. The value of marl is precisely as the amount of lime they contain.—Marls seldom contain more than 20 per cent of carbonate of lime associated with sands or clay." The following analysis by Springel gives the composition of two kinds of marl, shell and clayey marl:

	Shell Marl.	*Clayey Marl.*
Quartz, Sand and Silesia,	5.6	58.4
Alumina,	0.4	8.4
Oxides of Iron,	4.2	6.7
Oxides of Magnesia,	Trace.	0.8
Carbonate of Lime,	85.5	18.2
Carbonate of Magnesia,	1.25	8.8
Sulphate of Iron, Potash and Soda combined with Silica,	0.05	1.6
Common Salt,	0.03	Trace.
Gypsum,	0.06	2.1
Phos. Lime, (bone earth,)	2.3	0.5
Nitrate Lime,	0.01	
Orgauic Matter,	0,6	
	100	100

I am almost confident that I have seen shell marl in Eastern Alabama, in Russell county, on

Big Uchee creek, as rich as the specimen here analysed.

The proper mode of applying marl is to haul it out on a fall fallow, depositing it in small heaps of from five to eight bushels at equal distances every way, and allow it to remain during the winter, that it may crumble down and pulverize, at the rate say of five to six tons per acre. We have seen it so shelly, and the shells of such consistence, as to render it necessary to burn it previous to using it at all. There is no manure more valuable on poor, sandy land than marls, as is plainly indicated in their composition.

Marling is comparatively a new business in Alabama, and indeed in any portion of the cotton States; but the day is rapidly approaching when it will become a business of unlimited extent,—and why so? The cotton States, especially Alabama, Mississippi and Florida abound in any quantity of the best of marls, and when it becomes generally known and well understood, that an application of five to six tons of marl, will make any and every acre of the *exhausted homestead* worth one hundred dollars, and each and every such acre, after paying all expense for labor and sustaining its proportion of sustainence to the family or those working it, and then pay a better premium than one hundred dollars vested in ony other way, our planters will cease their westward march, and we shall see them investing their capital in marl banks, secured by the strongest and best of bonds,—graded ditches and horizontal rows.

Guano, Plaster, &c.

We have a letter from Mr. N. A. McMillan, of Canton, Wilcox county, in which the writer states: "I am just about starting a farm on sandy land, and I wish you to inform me as to the propriety of applying Guano, Plaster, &c., to it for the purpose of raising corn; the mode of application, the time and quantity; and the propriety of mixing Guano and Plaster; what kind of Plaster, and the proportions of each."

We may remark, in replying to the various inquiries of our correspondent, that we have been using Guano and Plaster as fertilisers for the last 8 or 9 years, on all the various crops usually cultivated in this country. We have not a great deal of experience in the use of Guano and Plaster mixed, as we never found anything composted with Guano, that did not add to the trouble and expense of applying the Guano, without a corresponding advantage; nevertheless, our experience has satisfied us that a valuable compost may be made of Guano and Plaster.

We have, however, recently met, in a late number of the New York *Agriculior*, with some interesting experiments that have been conducted by gentlemen in Virginia and Maryland, which would seem to be rather contradictory in their results.

We presume these experiments will furnish the information that our correspondent desires, and we therefore submit them. The first are from Mr. T. S. Pleasants, of Virginia, which go to prove that there was an injury done by mixing Guano with Plaster. But the others, communicated to the *American Farmer* by Mr. Caleb Stabler, of Maryland, would seem to justify the practice as advantageous, the increase being very large over that from the application of Guano alone:

MIXTURE OF GUANO AND PLASTER.—There has been a good deal of controversy in Maryland and Virginia recently on the policy of mixing Plaster with Guano previous to sowing it. Some experiments, which we annex, from Mr. T. S. Pleasants, of Virginia, seem to prove that there was an injury from this practice; but others communicated to the *American Farmer* by Mr. Caleb Stabler, of Maryland, would justify it, the increase being very large over that from the application of Guano alone.

The first experiments are as follows:

No. 1. Had no manure.
No. 2. 16. lbs, Guano alone.
No. 3. 16 lbs. Guano and 5 lbs. Plaster.
No. 4. 16 lbs. Guano and 12 lbs. Plaster.
No. 5. 16 lbs. Guano and 18 lbs. Plaster.

The Guano and Plaster for the above experiments were thoroughly mixed 7 days before being applied to the land, and frequently stirred.

No. 6. 16 lbs. Guano alone.
No. 7. 16 lbs. Guano and 5 lbs. Plaster.
No. 8. 16 lbs. Guano and 12 lbs. Plaster.
No. 9. 16 lbs. Guano and 18 lbs. Plaster.
No. 10. 16 lbs. Guano plowed in, and top-dressed with 12 lbs. Plaster, after the wheat was sowed.

The Guano and Plaster for these experiments were likewise well mixed, and applied immediately. The whole was turned in with a double plow, with the exception just stated.

No. 1.	56½	lbs.	wheat,	equal	to	12	bush.	14½	lbs.
No. 2.	125	"	"	"	"	27	"	05	"
No. 3.	118	"	"	"	"	25	"	34	"
No. 4.	112	"	"	"	"	24	"	16	"
No. 5.	109	"	"	"	"	23	"	37	"
No. 6.	112	"	"	"	"	24	"	16	"
No. 7.	110	"	"	"	"	23	"	50	"
No. 8.	102½	"	"	"	"	22	"	12½	"
No. 9.	101	"	"	"	"	21	"	58	"
No. 10.	108	"	"	"	"	22	"	19	"

The following are from Mr. Stabler:

Lands 88 by 6 yards—498 square yards. The guano and plaster mixed 9th mo. 20th, '51, and that, as well as the guano by itself, moistened as we usually do it for sowing—10th mo. 1st, each parcel shoveled over on a plank floor, so as to thoroughly incorporate them, and then returned to the barrels—10th mo. 10th, (29 days after mixing,) sowed the wheat with the different parcels of manure, shoveled them in, and rolled the ground.

Pounds of Wheat per Acre.

No. 1.	No manure	69½	11	bush.	35	lbs.
No. 2.	½ bus. Guano	113	18	"	18	"
No. 3.	½ " " ½ bu. Plas.	147	23	"	28	"
No. 4.	½ " " ½ " "	154	24	"	56	"
No. 5.	½ " " 1 " "	151	24	"	27	"

Quantities of Manure per Acre.

No. 1. No manure.
No. 2. 250 lbs. Guano.
No. 3. 250 " Guano and 2½ bushels Plaster.
No. 4. 250 " Guano and 5 bushels Plaster.
No. 5. 250 " Guano and 10 bushels Plaster.

☞ We have a private letter from a gentleman of Cedar Town, Georgia, detailing the result of some experiments in the culture of corn, a portion of which we take the liberty of inserting in this number of the Cotton Planter, from the fact that we desire to suggest to our correspondent a slight variation of the experiments.—We should be pleased to have an experiment the present year, of the alteration we shall suggest on the same ground and in connection again with his most successful one. We give the extract and then the proposed alteration.

"Last spring I measured off three parcels of land, containing precisely the same amount each. I planted the first parcel 3 by 3 feet each way, [9 square feet to the hill,] one stalk to the hill; 2d. 4 by 4 and 2 stalks, [16 square feet to the hill;] 3d. 4 by 2 and one stalk, [8 square feet to the hill.] They were each cultivated alike. A few days since I had the corn gathered and carefully measured, the result of which has confirmed me in an opinion I have long entertained, viz· that on any valley or upland, there can be more corn made one year with another, by planting it 3 by 3, and one stalk, than by any other mode. That planted 3 feet each way, made 66⅔ bushels per acre, and the other two 62½ each. On a forty acre field the difference in favor of the former would be about 30 bbls. enough to fatten 30 pork hogs."

We suggest to our correspondent this alteration, viz:—lay the rows five feet wide and put the stalks 21 inches apart on the row. By this arrangement of the stalks you will have 140 more per acre than when planted 3 by 3. If by this plan of 5 ft. by 21 in. as much corn can be grown on an acre of land, all other things alike, it is the best arrangement for planting from the following considerations: All upland should be protected by grade ditches and perfectly horizontal rows. Five feet rows we are convinced, from many years experience to be the best, and most convenient for this mode, (the only true system of improvement,) the land can be worked to better advantage and more effective; by this mode also, a much heavier fall of rain may be retained immediately in the place where it falls on the land, than if the rows were laid narrower. This is an object of much more importance than our planters seem to be aware of. If all the rain that falls on land should sink into the soil where it falls, it would, perhaps be impossible to exhaust the fertility of any soil by cropping, and certainly not by a judicious system of rotation and shift of crops. With this subject, however, we shall have much to do hereafter.

Horticulture.

CULTURE OF THE STRAWBERRY.

Dr. Cloud,

Dear Sir: According to promise made, when I had the pleasure of meeting you at the Macon fair, I now send you a description of my manner of cultivating the Strawberry, founded on the experience of many years. It is so very simple that no one need, in this plenteous Southern country, be without an abundance of this delicious fruit for four or five months, instead of two or three weeks. If the work is properly done and the plants of the right kind, there will be no future labor required in the cultivation, a very important consideration, and one that can only be correctly appreciated by those who have had to keep a Strawberry bed clean and the plants in a healthy condition during our long and hot seasons.

The land intended for Strawberries ought to be well and deeply worked; if on a large scale for market, have it sub-soiled as deeply as possible; if in the garden, have it trenched with the spade, at least eighteen inches deep, always being careful to keep the top soil on the top; cover the whole an inch deep with well rotted manure—that from the cow-pen is to be preferred, being colder, but stable manure will answer, but is, from its dry nature, more liable to burn the roots in dry weather—mix the manure intimately with the top soil with the plow or spade; level the surface and make it fine with an iron-toothed harrow or rake; lay off the rows eighteen inches in medium and two feet in strong land; put the plants from fifteen to eighteen inches apart in the rows, then cover the whole bed at least six inches deep with any kind of straw or leaves from woodland. If straw is used, it will be necessary to put the plants exactly opposite each other in the rows, so as to be able to put the long straw between the plants. It is best to check off the whole bed and plant in the checks. I use salt water rushes and salt water marsh grass, on account of their being more convenient, and think the salt in them has a beneficial effect on the strawberry plant.

The work for the season is now done, and until you come to gathering the fruit, nothing in the way of culture will be required, unless to pull up any large weeds that may spring from roots accidentally left in the ground; no grass or small weeds can grow under the covering. The strawberry plants will grow vigorously all summer;

in the fall put on half an inch thick of well rotted manure; dig it in, and also all the runners and last year's covering, leaving the plants at the same distance as they were planted. As long as the plants are strong and bear well, they may be allowed to remain; but when any signs of decline appear, turn in the old plants along with the manure, and leave the young ones in the intervals, the proper distance apart, and cover as before, and the whole labor for another year is done. The same bed may be continued for years, by changing the spaces for the plants every other year; but it is best to change them every five or six years.

Strawberries, like everything else worthy of cultivation, grow best in rich land, and that which is neither too wet nor too dry, suits them best; and a very small space of ground, managed as before mentioned, will supply a family with an abundance of these best of all berries, from the middle of March to the end of July, with no labor but that of watering in very dry weather; and if the land has been stirred by subsoiling or trenching, and properly mulched or covered after planting, the cover will retain moisture, so that but little watering will be needed.

The deep ploughing or trenching in preparing the land, is, in our Southern climate, absolutely necessary, for, although the strawberry plant has but small fibrous roots, yet these will descend as deeply as the earth is stirred, and will suffer but little in time of drought; and the manure is just as necessary, especially in land not very rich, for it is only under the shade of the largest and greenest leaves, (and they are only found in land naturally rich, or made so by manure,) that the largest and most luscious fruit is found—healthy, large leaves being as requisite for the production of fine fruit as healthy roots.

Strawberry beds in full bearing produce few or no runners during the fruit season, but when any appear they ought to be carefully cut off, barren plants when discovered ought to be dug up and thrown on the manure heap; if left from their stronger growth and greater production in runners, they wonld soon take entire possession of the ground, and smother the weaker but pro ductive plants.

In planting new beds, the largest and finest plants or runners from roots, bearing the largest and greatest number of fruit, ought only to be used, and this principle of selection ought to be followed in all productions of the field and garden.

The strawberries at present cultivated by me are Hovey's seedling, Kean's seedling and the Virginia early scarlet. Hovey's is the best bearer, producing the largest and best flavored fruit, many of them very large, from three to four inches in circumference. Kean's seedling has a smaller fruit generally, and does not bear so well, nor for so long a period as Hovey's.—The Virginia scarlet is an early and great bearer, but the fruit is rather too acid,—it sometimes bears until late in July.

There is an impression but too prevalent at the South, that we cannot raise fine fruit, our position being too far South, for the fruits of the North, and not far enough South for those of the tropics. This is a great mistake and has prevented many from trying what they could do in growing fruit. Excepting picking, a bushel of strawberries can be more easily and cheaply produced than a bushel of potatoes.

Wishing you every success in your undertaking and that your "Cotton Planter" may be found in every homestead of our broad sunny land,

I remain Respectfully,
JOHN MILNE.

Beaufort, S. C. 24th Dec. 1852.

[From the Horticulturist.]

A LIQUID FERTILIZER FOR CHOICE PLANTS.

BY AN AMATUER, NEW-YORK.

Dear Sir—I am confident that there are many of your lady readers, and perhaps many of the other sex, who are puzzled among the many *new manures*, and having failed with some, and injured their plants with others, they end by raising only sickly and meagre plants, when they might have them presenting a luxuriant and satisfactory appearance,—with leaves of the darkest green and flowers or fruit of double the usual size.

Having made a trial for three years past, with a perfectly safe and satisfactory liquid fertilizer, which appears to suit all kinds of vegetation, which is clean and easily applied, and procured without difficulty, in any town, I confidently recommend it to your readers, especially those who wish to give especial pains to, and get uncommon results from, certain favorite plants,—either in pots or in the open garden—plants, whose roots are within such a moderate compass, that they can be reached two or three times a week, if not oftener by the watering-pot.

This liquid fertilizer is made by dissolving half an ounce of sulphate of ammonia in a gallon of water.

Nothing so good can be cheaper, and the substance may be obtained at almost any apothecary's.

Now for the mode of using it. I may say, at the outset, that weak as this solution appears to be, and is, if plants are watered with it daily, they will die—just as certainly as a man will who drinks nothing but pure brandy.

The right way to apply it is, to water the plant

with this solution every sixth time, the other five times with plain water.

The proportion is so simple, and the mode of using it so easy to understand, that the most ignorant person cannot possibly blunder about it—if he can count six. If we prepare the solution occasionally, and water our plants in pots every Saturday, with this ammonia water, and all the rest of the time with plain water, we shall have a safe rule.

The result will, I am sure, both delight and surprise every person who will make a trial of it. It has become such an indispensable thing with me, that I regularly mix a barrel of it every Friday, and use it on Saturday, upon any plants that I particularly wish to invigorate and stimulate. I do not know that I have seen a single instance of its disagreeing with any plant—ammonia being the universal food of vegetation. Of course, the more rapid growing plants—those with foliage that perspire a great deal, are most strikingly benefitted by it. Of course, also, plants that are at rest, or not in a growing state, should not be fed with it; but any plant that is about starting, or is actually in a growing state, will not fail to be wonderfully improved by it.—Many plants that have fallen into a sickly state by reason of poor, or worn out soil, will, usually, in the course of a month, take quite another aspect, and begin to develope rich, dark green foliage. I will enumerate some of the things that I have had great success with.

Strawberries.—Beds of indifferent appearance at the opening of the spring, last season, after being watered four times with this solution, grew very luxuriantly, and bore a crop of remarkably fine fruit. This year I have repeated the experiment on half of every bed; both foliage and blossoms are as large again on the watered, as on the unwatered bed; and by way of comparison I have watered some with plain water also,—and find, though rather benefitted, (for the strawberry loves water,) they have none of the extra depth of verdure and luxuriance of those watered with ammonia.

Early Peas.—At least a week earlier than those not watered, and much stronger in leaf and pod.

Fuchsias.—A surprising effect is produced on this plant, which, with the aid of ammonia water will grow in very small pots, with a depth of verdure, a luxuriance and a profusion and brilliancy of bloom, that I have never seen equalled. Old and stunted plants are directly invigorated by it.

Dwarf Pears.—Some sickly trees, that I have given the best attention for three years previously, without being able to get either good fruit, or healthy foliage, after being watered four times with the solution—of course with the usual intermediate supply of common water—became perfectly healthy and luxuriant, and have ever since, (two years,) remained so.

Dahlias.—Which I have never succeeded well with before, have done beautifully with me since, flowering most abundantly and brilliantly, when watered in this way. In all out-of door plants, if mulching is used, only half the quantity of plain water is needed. For plants in pots, I consider it invaluable; and gardeners who wish to raise specimen plants for exhibition, will find this mode of watering them every sixth time with the solution, to produce a perfection of growth not to be surpassed in any other way.

Yours truly,

AN AMATUER.

New-York, May 10, 1852.

We endorse our correspondent's testimony to the value of the solution of sulphate of ammonia, applied in the manner he directs, having witnessed its satisfactory effects. Ed.

TRANSPLANTING TREES.—In answer to many inquiries, we would advise that all trees, except peach, apricot, nectarine and other similar sorts, should be transplanted in the autumn or late in the fall. By choosing this season of the year, the trees may be stripped of the leaves, and thus the great surfaces for evaporation will be removed. The body of the tree, by this treatment, may retain its moisture, not losing it by the active power of growing leaves. This gives the roots an opportunity to establish themselves, and to retain the moisture received by simple absorption before the formation of spongioles, which draw water by the natural laws governing the action of plants. Such trees planted out in the spring would be parting with large amounts of moisture from the surface of the leaves before the roots were sufficiently established in their new location to supply the necessary amount to compensate for evaporation. The slightest drying of a tree at the time of transplanting is likely to interfere with its organism, and give rise to after unhealthy habits. When large supplies of water are on hand, it is well to settle the earth around the roots by its use, as this causes the particles of earth to come in direct contact with the roots, and to get up a condition of the soil more closely resembling that from which the tree has been removed. It is impossible by pounding or stamping to settle the earth as judiciously as by the use of water.—*Working Farmer.*

THE BOURBON ROSE—PAUL'S PRINCE ALBERT.—*Turner's Florist* for November gives a brilliantly colored portrait of Paul's new Bourbon Rose, *Prince Albert*, accompanied with the following remarks:

"About thirty five years ago, a French botanist, M. Breon, visited the island of Bourbon, and found growing, in a garden at St. Benoist, a rose

altogether new to him. The flowers were rosy carmine, beautisully cupped, and the petals remarkable for their size and smoothness. Our botanist did not fail to appreciate this *nouvcaute* and sending it to Paris, it was there multiplied and scattered abroad. This was the original Bourbon Rose. It is not a species, but an accidental hybrid, supposed to have sprung up between the common China Rose and the red Four Seasons.

Some of our readers will doubtless remember the rose *Ile de Bourbon* or Bourbon Jacqees—for under both these names it was disseminated; and it is from this rose, variously hybridised, that all the Bourbon Roses have been obtained. For the few first years most of the seedlings raised were of the same color as the original; some were finer, and many were double; one of which, Augustine Leleur, remains a good rose to this day. The first variation was the production of kinds of a clear and beautiful silvery tint, then of a dark purple and crimson hue, till now we have in the subject of this notice a flower of as brilliant color, and equal in form, to almost any rose. The habit of Prince Albert is dwarf; the shoots are very robust, and clothed with large, rich, green foliage. It usually blooms in large clusters, but does not grow rampant, like *Madam Desprez*, but produces short, massive shoots, more in the way of *Comice de Seine et Marne*, from which it is probably a seedling, although more robust, larger, brighter in color, and more double. As it is of dwarf habit, and blooms freely from June till November, it will probably prove an acquisition as a bedding rose. The autumn blossoms we have observed are of a richer but less brilliant hue than those of summer.

The history of this rose is briefly this: Mr. Paul of the Chestnut Nurseries found it growing in the garden of the raiser, in the neighborhood of Fontenay-aux-Roses, near Paris; and being struck with the beauty and brilliancy of the flowers, purchased the entire stock, and now, for the first time, offers plants for sale.

The Bourbon Roses generally are hardy and easy of culture; the short-wooded, free-blooming kinds require two annual dressings of manure and close pruning; they are then the most beautiful of autumn roses, flowering better and more abundantly late in the season than in summer, fine flowers often expanding at the end of October.

Strawberries Grafted on Roses.—A short time ago were exhibited in Paris, in a florist's shop on the Boulevard des Italiens, several rose-trees, upon which were grafted a few strawberry plants. This curiosity attracted much attention from the passers-by. The process by which it was effected was as follows: In autumn a few dog-roses of good sorts, on their own roots, are selected and planted in pots; at the same time a well-rooted strawberry is placed with each rose, planted just beneath the stem of the rose. In spring when the runners push out, two or three of them are tied up to the stem of the rose. It is well known that the runners of the strawberries soon make their own roots, and in due time these roots are cut away, making the cuts as for a scion, and then they are gaafted on the rose stem, "without cutting or rearing the runners from the parent plant in the ground." They should be preserved very carefully, to lead the sap upward to the scions, and, treated in this way, the strawberrries will vegetate upon the rose-tree for some time.

To Prevent Mildew.—Mildew is one of the greatest pests of green-houses, and all sorts of plant structures. The following remedy has been tried in the houses of the London Horticultural Society, and it is thought will prove efficacious: Sulphur and unslaked lime put into a tub of water, in which they are quickly and intimately mixed, and the trees and plants syringed with the clear liquid after these substances have settled at the bottom."

Miscellaneous.

☞ The article below, as published in the *Tribune* of Mobile, on the use of Guano, was sent us by some kind friend, and we cheerfully give it a place in our journal. This new and valuable fertilizer is attracting much attention just now, and all practical information with regard to its use and application must prove interesting to our planters.

We are personally acquainted with some of the gentlemen whose experiments are referred to, and know them to be entitled to all credit:

THE USE OF GUANO.

Notwithstanding the apparent expensiveness of this manure, its use is gradually extending; and where judiciously applied, has been found highly beneficial for all kinds of garden, field and plantation culture on all descriptions of soil. On cotton, fewer experiments perhaps have been made than with other crops; but in the few cases where it has been applied, the results were entirely satisfactory.

Mr. Stephens of Marion, Mississippi, has published in the *Star* the result of his trial last year with guano. He says:

"I planted on good cotton land, the rows four feet wide; I applied guano to each alternate row, at the rate of about 200 lbs. per acre, leaving the remaining rows without manure. This furnished an opportunity to ascertain precisely the increasdd production. I picked one row of the

unguanoed cotton, and it yielded 864 lbs. seed cotton. I also picked one row of the guanoed cotton, immediately by the above row, and it yielded 32 lbs. seed cotton. The rows being four feet wide, of course it took 52 rows to make an acre, which being multiplied by the above productions will show that the land without guano produced 936 lbs. per acre, and with guano it produced 1664 lbs. per acre, being an increase per acre of 728 lbs., or about 66 per cent. The guano put on this acre cost $6. The increased production, 728 lbs., at $2 50 per cwt., is worth about $18; deduct $6, the cost of the guano applied, and it leaves $12 clear profit per acre.

"I applied on my plantation several tons of guano. I found the result on all good lively cotton lands about equal to the above; but where it was put on old, thin, worn, light lands, and nothing mixed with it, I found it did but little good—not enough, I apprehend, to pay for the guano. Dead, poor, light, old lands must have something besides guano. I think, however, if rich earth, or surface as we geneeally call it, was placed in the furrow with the guano, on such side lands, it would pay very well. I think it would do well on the land lf new; but after the land gets old worn and washed, surface must be put with the guano or it will not pay."

In regard to poor lands, that is, exhausted lands, his suggestion was no doubt a good one. A mixture of plaster and guano would, however, be much better, and would, with favorable seasons, produce fine yields of cotton, corn or wheat.

In Virginia and elsewhere guano has been employed on wheat and oats with the most marked success. Mr. C. Russell, of Virginia, used guano on wheat at the rate of 200 lbs. to the acre and ploughed in six inches deep—land unlimed and sterile as could be wished. The crop of corn preceding the wheat only made a barrel and a half per acre. The yield of this field was 22 bushels an acre. The Farmers' Club in his neighborhood is of opinion that Mr. Russell is indebted to the guano for 17 bushels of this wheat.

On oats, Mr. J. D. Matthews, of Prince George, made a trial with guano. That he might accurately test its true value, he seeded 442 square yards of unlimed and otherwise very ordinary land, without guano; the yield was 31 lbs., making per acre 345 lbs. He then seeded alongside the land of similar quality, guanoed at the rate of 150 lbs. per acre, well mixed with wood ashes, at the rate of five bushels per acre, and ploughed under eight inches deep, which yielded 452 lbs., making a difference in favor of the guano of 1,107 lbs. per acre. Mr. Matthews afterwards seeded six acres of land in oats, guanoed and ashed at the above rate, which produced 1,884 lbs. per acre, being better than the piece he experimented upon.

But let us come nearer home. In 1851 several gentlemen in the vicinity of the city used guano on several kinds of crops. Mr. J. Donovan has used it on his farm ten or twelve miles from the city. He cultivates pine land, level, with light sandy soil based on clay. For corn, after well breaking up, he applied the guano broadcast at the rate of 400 lbs. per acre; then ploughed in and harrowed. The crop was cultivated as usual. The yield was fully fifty bushels per acre, the ears large and well filled.

Mr. J. C. Hodges, five or six miles west of the city, sowed two pieces of land, which had been previously limed and cultivated, one in oats and the other in barley, spreading at the same time 250 lbs. of guano to the acre. All was ploughed in and harrowed. Both crops were remarkably fine, so much so as to attract the attention of every one who passed by the fields. The land is sandy, unless at a great depth, and without manure would scarcely "sprout peas." Mr. Hodges also tried guano on sweet potatoes with the most satisfactory result, producing unusually large and fine potatoes. In regard to Mr. Donivan's experiments, he sent us a note, stating that his first trial was with sweet potatoes. He planted three acres, manured with guano at the rate of 400 lbs. per acre. In the same field alongside, he planted an acre manured with good compost from the stable, at the rate of sixty cart loads to the acre. The field was old and worn out. A part planted without manure failed to produce twenty bushels of small potatoes per acre. The yield from the stable manured and guanoed land was about equal, say 200 bushels of fine large potatoes and fifty or sixty bushels of small ones. The next year the field was put in corn without additional manure and produced finely. From one acre in oats, with 400 lbs. guano broadcast, he gathered sufficient oats to fodder four horses for three months. The oats grew six feet high. Mr. Donavan has tried guano on corn, peas, potatoes, (Irish and sweet) water-melons, turnips, tomatoes, and other garden vegetables, fruit-trees and shrubbery, and says with confidence that it is one of the most powerful as well as the cheapest fertilizers in the country. The poor pine-lands in the high neighborhood of Mobile, treated as above, will, Mr. Donavan thinks, always be good for 40 bushels of corn per acre.

We have at hand some experiments more recent, all within a few miles of the city. Mr. S. Roberts has used guano on melons, sweet and Irish potatoes, and in fact on all garden vegetables with entire success. He cultivates the ordinary pine land. His sweet potatoes yielded about 400 bushels to the acre, all very large and of uniform size. He put up a barrel, a forty gallon whiskey barrel, for a friend in New York—

forty seven potatoes filled it, some of them weighing 11¼ pounds. Mr. Roberts used about 200 lbs. guano per acre, sprinkling the guano in the drill, and covering the dirt before planting the slips.

Mr. A. H. Ryland has also used it with the most marked success in producing grass for hay. He has formerly bought from 200 to 250 bales of hay a year. The past season he made enough on a five acre lot to feed his stock the whole winter, and will not have occasion to buy any. His mode of culture is as follows: About this period of the year he prepares his ground for sowing the oats by ploughing in 200 lbs. of guano to the acre. In June he cuts the oats, and in the fall takes off his crop of crab grass. Last fall the yield of grass was so large that it could not be cured on the ground where it grew.

Mr. D. T. Brennan, one of our most successful market gardeners, employs about 200 lbs. per acre, mixed with a little manure and sowed broadcast. He never fails having fine crops. After taking off a crop of potatoes, or an early one of corn, he levels his ground by harrowing and rolling, and cuts the following fall a fine crop of crab-grass hay. This grass stood last season four feet high, and had the appearance of a meadow in the Eastern States. As another evidence of what may be done by the proper employment of guano, we may mention that Mr. Wm. Flash, of this city, prepared in November last about half an acre of ground for cabbages, by applying 150 lbs. of guano in the drill when transplanting, and that he sold the lot of cabbages a few days since to a huckster, as they stood in the ground, for $180.

Other cases might be cited, proving the great fertilizing properties of guano, and its adaptation, not only to the soil of our immediate neighborhood, but to all kinds throughout our State. But we have said enough to convince any intelligent mind that it is one of the best manures now employed. The price may seem high, but in view of its small bulk and consequent facility of application, we consider it cheap, and so will any intelligent culturist who tries it.

It may not be amiss, in this connexion, to inform our readers that Messrs. P. B. Pomeroy & Co., nave arranged for a constant supply of the genuine Peruvian guano, which will be sold at a small profit.

[From the Soil of the South.]

Rock Mills, Ala. April 21, 1852.

Mr. Editor,—Inasmuch as the columns of the *Soil of the South* are open to all, I take the liberty of communicating a few recipes for the benefit of those who may find them interesting, and as I think the fewer words used the better, I will be short. And I further think that what is published should be attended with experimental testimony.

1st. How to prevent ants and other crawling insects from annoying bees, sweet-weats, &c.

Tie greasy wool round the legs of the bee gum bench, or spread it under the jars. If dogs eat it off, dip the wool in a little spirits of turpentine.

2d. To prevent the bud-worm from injuring corn in low, wet places.

Put a small quantity of ashes in the hill when planting. Another way is to transplant those wet places with corn drawn from other places in thinning. It will grow and ear well, and the worm will not attack the transplants.

3d. How to prevent birds and hens from pulling up corn.

Soak the seed in a decoction of hen manure and a small quantity of fish brine sixty hours, and rub in ashes and plant. My word for success.

4th. How to protect cucumbers from frost and destroy the bugs.

Permit gourds to grow about tho fence—no matter what shape. Saw the gourds open, and in cold nights turn them over the cucumber hill. They will save it from frost, and the bugs will collect in the gourds for safety and shelter. In the morning take a torch and burn the bugs. In two days you may exterminate all the bugs in your neighborhood.

5th. How to plant cabbages, &c.

Get a plank the length of your rows and seven inches wide. Lay it across the bed and plant by the edge of it—walk on the plank to prevent treading the ground when wet. Your rows will be straight, and your ground not trod.

6th. How to have an orchard of bearing pears in two or three years.

Select healthy crab trees five or six feet high; dig them up with care; mind to save as many roots as possible; cut off all the limbs except three or four to graft on; cut them within one inch of the body of the tree. The reason for this is, that if you graft from the body of the tree, the graft will out grow the crab limb, become heavy and twist off. Get your pens from a bearing tree, and you will have a beautiful healthy tree.

7th. Grapes may be brought to bear the second year by grafting in wild grape vines. In getting grape vines to graft upon, in order to success, the root or stock must be vigorous and healthy, otherwise your labor is in vain.

8th. In manuring with ashes, I find a small quantity, on my land, answers a better purpose than too much.

I have growing three varieties of American Grapes—two from the forests of Texas, and one from the north-western part of North Carolina. The two from Texas bore a few bunches of large black grapes last year. I think they will

do well. The variety from North Carolina is a Fox Grape, of a purple color, as large as a small Tomato, smells lucious, and is the most thrifty vine I ever saw. It was grafted into a native grape vine.

If any of our friends wish to try any of my grapes, they know where to find me. I should like very much if all the writers in the *Soil of the South* would write over their own English names, as I do not understand Latin.

Yours, &c.
JOHN McPHERSON.

[From the Southern Cultivator.]

BLACK OATS.

Messrs Editors—I procured ten bushels of Black Oats last fall, and sowed twelve and a half acres—in November. They stood the severity of the winter, until the last very extreme cold spell, and I then thought they were all destroyed; but some time after I discovered some living bunches, and I concluded, as they were scarce and very high, to try and save all I could for seed. As the spring advanced, I saw more greenness over the lot, and when matured I was driven to the necessity of feeding some of them, perhaps ten or twelve dozen. I saved and housed them, and had them thrashed a few days past, and though a leak had destroyed some ten bushels, I had measured, of clean oats, one hundred and six bushels. I have but little doubt I made one hundred and twenty-five bushels—and now comes the marvelous. I found one bunch, growing from one seed, that had *one hundred and twenty-nine heads*, and I counted one head that contained three hundred grains. If each had averaged three hundred grains, it would have been thirty-eight thousand seven hundred; but one hundred and fifty grains to each head, (and I have no doubt they will do that,) make nineteen thousand three hundred and fifty grains from one, and there were many found having over one hundred branches or heads, and a great many over eighty. I have proof of what I say, indisputable, and I have fifty-six bushels for sale at $1 00 per bushel. I would never sow any other kind, but the time they are obliged to be cut interferes with the crop.

If any of your readers should doubt the increase, I have not only evidence of what I say, but I have several bunches together with the celebrated one hundred and twenty-nine. Some have counted and said one hundred and thirty-two, instead of one hundred and twenty-nine heads.

G. LUMPKIN.

Harmon, Oglethorpe co. Ga.

FOR RATTLESNAKE BITES.—The following, says the New York Sun, is an Indian recipe for rattlesnake bites, and said to be the most infallible remedy used a few years ago by a certain tamer and exhibitor of those reptiles in this and other cities, who it may be remembered, allowed them to bite him frequently during exhibition: Pulverized Indigo, 4 drachms; Pulverized Camphor, 8 drachms; Alcohol, 8 ounces. Mix and keep it in closely corked bottles. The directions for using are simply as follows: After shaking the bottle, soak the bitten part in the mixture for fire minutes, and the cure is complete.

Brief Review of the Cotton Market.

For the information and satisfaction of our planting friends, we furnish in this number of the *Cotton Planter* a concise and hasty review and statement of the condition of the Cotton Market, up to the close of January, taken from the Merchants' and Planters' Price Current, and Mobile Journal of Commerce Letter-Sheet Price Current, of the latest dates, 29th Sanuary.

We can but remark to our friends, that the prospective prosperity of our cotton industry is truly flattering. Upon the heel of a signally unprecedented crop, that of 1851, and in the face of another promising 3,300,000, at least, fair and remunerating prices are sustained.

The sales of the week, ending January 29th, are put down at 18,000 bales in Mobile, taken mostly by Northern orders—the English and French taking but little.

LIVERPOOL CLASSIFICATION.

	Jan. 28, 1853.	Jan. 31, 1852.
Ordinary	7¼@ 8	6¼@6¾
Middling	—@ 8¾	7⅛@6¾
Good Middling	9¼@ 9½	7½@7⅞
Middling Fair	10 @10½	7⅞@8
Fair	10¾@11	8¼@8½

The receipts of the week amount to 22,439 bales, and exports 24,515 bales, leaving the stock on hand and on shipboard not cleared, 123,508 bales.

The receipts up to the latest dates, at all the ports, give the following result:

INCREASE—New Orleans	330,755		
Mobile	77,308		
Savannah	30,641		
Virginia	1,450		
North Carolina	2,582		
Texas	13,384		
Florida	18,218	—474,347	
DECREASE—Charleston		2,878	
Total increase for the season			471,469

The foreign exports this season, as compared with last, will exhibit an increase:

INCREASE—To Great Britain	298,716		
Other foreign ports	88,358	—387,074	
DECREASE—To France		88,429	
Total increase			299,645

The decrease in coastwise exports is 7,762 bales. The increase in stocks, at all the receiving ports, is 119,285 bales.

NEW ORLEANS MARKET.

Junuary 29th.—The letters by the Arabia came to hand this morning, but do not appear to have brought many orders, as the demand is very limited, and thus far we have heard of the sale of only 1,000 bales.

Contents of this Number.

Analyses of the Cotton Plant and Seed.....33
Wool and Wool-Growing.....36
The History of Cotton Manufactures.....38
To Preserve Fresh Meat.....40
Draining.....40
The Farmer's Level.....41
Hill-Side Ditching No. 2.....41
The Cow and the Dairy.....45
Dried Fruit.....45
Importance of Light.....45
Thorn Hedges.....46
Inexhaustible Supply of Guano.....47
To Farmers' Boys—A Hint.....47
Analysis of Soils and Pulverization.....48
Guano, against Manure and Marl Compost.....48
Editorial Notices &c.....49–50
Southern Ladies' Book—Horticulturalist—Direct Importation of Guano, &c.,.....51
Cotton—Its Improved and True Culture, No. 1.....52
Plantation Economy, by Dr. M. W. Philips, No. 3.....53
Preserving Forest Growth as Manure.....54
Arrow-Root—Its Culture, &c.—Marl—Its Value, and Quantity to be applied,.....55
Guano, Plaster, &c.....56
Corn Experiments.....57

HORTICULTURAL.

Culture of the Strawberry.....57
A Liquid Fertilizer for Choice Plants.....58
Transplanting trees—The Bourbon Rose.....59
Strawberries grafted on Rose stalks—To prevent Mildew,.....60

MISCELLANEOUS.

The Use of Guano on Various Crops.....60
Valuable Receipts on Various Subjects.....62
Black Oats—For Rattlesnake Bite—Review of the Cotton Market,.....63

WILLIAM WRIGHT,

Surgeon's Machinist, Truss Maker, Cutler, &c.,

PERRY STREET, OPPOSITE THE RIALTO,

MONTGOMERY, ALA.,

MAKES and adapts every description of Truss for Inquinal, Cural, and Umbilical Hernia;
Spinal Supports for Curviture of the Spine;
Instruments for Incurvation of the Limbs of Children, club feet, distortions, &c. &.;
Artificial Limbs; Laced Stockings; Ankle Socks; Knee Caps for varicose veins, weak and swelled legs, knees, &c. &c.

P. S. Particular attention paid to Plantation Stands, and Instructions for Measuring sent by post to any part of the country.

ALSO, ON HAND ALWAYS,

A Splendid Assortment of *SHEFFIELD CUTLERY*, of the finest quality, finish and temper, imported direct from the makers, consisting of
Ivory-Handled Table Knives, for Silver Plated and Steel Forks;
Pen, Pocket, Hunting, and Sportsmen's Knives;
Razors, warranted; Strops, &c. &c.;
Ladies' Scissors, and a variety of other articles of Cutlery.

☞New Blades put in Handles. Cutlery and Surgeons' Instruments repaired.

February 1st, 1853.

Acclimated Fruit Trees,

ORNAMENTAL TREES & SHRUBS, GRAPE VINES, STRAWBERRY PLANTS, &c., &c.,

CAN NOW BE HAD, OF SOUTHERN GROWTH, AT THE

SOUTHERN NURSERIES, WASHINGTON, MISS.

THE Stock, this year, is good and well-grown. Prices and descriptive Catalogues, containing hints for planting, pruning and tending, will be promptly forwarded by mail to applicants who prepay their letters. Shipments can be made, with entire safety, to any part of the South—the utmost attention being paid to *packing* and *forwarding*.

THE SOUTHERN RURAL ALMANAC, FOR 1853,

Has been published, as usual, and will be sent by mail and prepaid, on receipt of 12 cents in postage stamps.—Orders solicited, for this useful and popular periodical, from Booksellers and Country Merchants; and advertisements from Gind-Stand and other Manufacturers, Schools and Colleges, Watering Places, &c. No other work has so large a circulation in the South.

AFFLECK'S COTTON PLANTATION RECORD AND ACCOUNT BOOKS, new edition, now ready. No. 1, for 40 hands or less, $2 50...No. 2, for 80 hands or less, $3 00...No. 3, for 120 or less, $3 50.

AEFLECK'S SUGAR PLANTATION RECORD AND ACCOUNT BOOKS—Number 1, for 80 hands or less, $3 00...Number 2, for 120 hands or less, $3 50.

☞These Books are now in general use amougst Planters. They will be sent by mail, prepaid and carefully enveloped, at the above prices. Orders solicited from Booksellers and other dealers, to whom a liberal discount will be made.

GENUINE UNADULTERATED

PERUVIAN GUANO.

THE Subscriber, acting under an arrangemeut with Messrs. F. Barreda & Brother, of Lima and Baltimore, the general agents of the Peruvian Government for the sale of Guano, and through whom alone this Guano can be procured, is prepared to supply Planters and others in the South, with a pure and unadulterated article, in any desired quantities, and at the following prices, delivered in New Orleans:

For any quantity under four tons, $50 per ton of 2000 lbs.
For more than four tons and under 25, $47 per do.
For larger quantities, the price is somewhat lower.

In all cases, where more than one ton is ordered, there will be no additional charges for drayage, &c., but the Guano will be delivered on board steamer, or in the city, at those prices. For less than one ton, drayage will be added.

By this arrangement, the cost to the Planter will be THE LOWEST at which GENUINE PERUVIAN GUANO can be purchased; avoiding the factor's commission for purchasing, drayage, repairs of sacks, &c., &c.; and the subscriber guarantees the article, procured through orders sent to him, to be unadulterated and pure as taken from the Chincha Islands. It will be delivered in sacks, containing each about 150 to 180 lbs.

A right draft upon a New Orleans house, or other equally available funds, must invariably accompany each order.

As the first cargo, coming direct from Peru to New Orleans, under the subscriber's arrangement with the Messrs. Barreda, cannot be expected to arrive before the 1st of October next, a supply will be immediately sent forward, reshipped at Baltimore and stored at New Orleans, to afford him the means of filling orders already received, or which may be sent to him during the winter. The price, for any quantity of this lot, over one ton, will be $50 per legal ton, delivered on board steamer; the freight and charges from Baltimore causing the additional price when even a larger quantity than five tons is ordered.

Messrs. Barreda, in their letter to the subscriber, laying down the scale of prices, and explaining the arrangements entered into for a deposit in New Orleans, remark,—"We have given orders to our Lima house to send direct from the Chincha Islands, a quantity sufficient to meet the demand, and to have a deposit always ready to supply any amount. The Guano that you will receive shall come direct from the said Islands."

From arrangements made with some of the regular Packet Boats on the river, the freight will not exceed, to any point below Vicksburg, from 20c. to 25c. per sack, or about $2,50 to $3.50 per ton.

THOMAS AFFLECK,
1st January, 1853-4t. Washington, Adams co., Miss.



A Monthly Journal, devoted to improved Plantation Economy, Manufactures, and Mechanic Arts.

Vol. I. MONTGOMERY, MARCH, 1853. No. 3.

From Hunt's Merchant's Magazine.

THE COTTON TRADE.

BY C. F. M'CAY,
OF THE UNIVERSITY OF GEORGIA.

The course of the cotton trade during the past year has been steady and uniform. The season opened in September and October, at rates a trifle higher than were realized in December, but from January forward the market slowly advanced, until now it is a little higher than it was a year ago. The price at Liverpool of fair cotton, on the 1st of September, 1851, was 5 1-2d., in October it was 5 1-4d., in January 5d., in March 5 1-8d., in May 5 1-4d., in July 5 3-4d., and 6d. in September, 1852. The increased estimates of the crop depressed the price early in the season, but the immense consumption in every part of the world—in the United States, in England and on the continent—encouraged the sellers to demand higher rates; and these have been maintained, in spite of the promise of another large crop for the ensuing year. The rates now current are not high, but they are above the average. For the twelve years from 1840 to 1852, the whole American exports, (see Table 1, at the end of this article,) amounting to nearly ten thousand millions of pounds, have been sold at an average price of eight and a half cents. The price of good middling at Charleston is, now, October-March, 9 1-2 cents. Instead of declining below the usual rates, the market has advanced, after receiving the largest crop ever produced, and with the prospect of another fully as large. What has maintained these prices? Are the causes temporary or permanent? Will they continue for the present year? or is their effect already past?

In attempting an answer to these questions, it may be remarked: 1st, That the advance is not due to the fact that lower rates do not pay. From 1840 to 1844, when the average (see Tabe 1) was only eight cents, the stocks were constantly increasing. The production outran the consumption. This led to lower prices, which discouraged planting, and at the same time increased the demand of manufacturers. From 1845 to 1849, the average price (see Table 1) was only 7 1-2 cents. The surplus stocks then became small and prices advanced. Thus it appeared that an average of 8 cents from year to year stimulated production, so that the supply exceeded the demand; while 7 1-2 cents produced the opposite effect. The present rates, therefore, are more than sufficient to pay the planter a proper profit on his investment. And the general advance on land and negroes throughout the Southern States, confirms the conclusion thus indicated by the rise and the decline of the stocks lying over from year to year. The present prices will not only pay the cost of production, but allow a handsome profit to the producer.

2d, The price has been kept up during the past year in part by the high rate of exchange. A rise of one per cent in exchange is nearly equal to one eighth of a cent in the price of cotton. The advance in exchange has been about two per cent over the rates which were current before the discovery of California gold. We were then both exporters and importers of the precious metals. When we were sending them abroad, the price of exchange was the real par, *plus* the freight, insurance, and other expenses of exportation. The highest rates were 111 or 112; the lowest, 104 or 105. The average was about 108 for sixty day bills. For the past two or three years, we have always been exporters of gold, and the range of exchange has been from 108 to 112 at New York; seldom going down to 108 or rising to 112, the average being about 110. This rise in exchange on account of our owning the gold mines in California, is a permanent cause. Exchange will be hereafter the real par, *plus* the cost of exporting specie, and not the real par, sometimes increased and sometimes decreased by the cost of exportation. This is equivalent to an advance of one fourth of a cent in every pound of cotton, and for the year past it produced to the South not less than three millions of dollars. This, though a true cause for an advance in cotton, is not sufficint to account for the whole rise. Another cause may probably be—

3d, The increased supply of the precious metals, which by expanding the currency tends to raise the price of all other articles of merchandize. The large additions of gold to the currency of the world must, by inevitable necessity, produce an effect of this kind. No arithmetic can calculate its exact amount, in a short period of time; but that it is producing and must produce hereafter a slow, continued rise in all kinds of property, no one can possibly doubt. Its first effect is to raise the price of silver; but it is impossible, while the present laws regulating the comparative value of silver and gold at the mints of the world continue unchanged, to raise the premium on silver beyond a very small amount. The effect of a slight advance is to push aside the silver and to introduce gold in its stead. Thus in our domestic currency, silver is passing out of general circulation, and the vaults of the banks are filling with gold in its place. In France the coinage of gold has of late increased very largely. And so in other countries where both metals are a legal tender. This expansion of the metallic currency gives the banks an opportunity to increase their circulation, and thus the whole monetary medium, by which all the exchanges of Commerce are made, becoming enlarged, the price of all other articles cannot fail to advance. It is impossible to say how large an influence this may have had in the recent prices of cotton. It is not probably large, but that it is real no one can doubt.

4th, Another cause which has helped to sustain prices, and probably this is more potent than all the others together, is the successful despotism of Louis Napoleon in France, and of the crowned heads on the continent of Europe. The order that has reigned in Paris and throughout France, has given confidence to the merchant and manufacturer, encouraged labor and industry, given security to property, and stimulated production and consumption in every department of business. Similar causes have been operating in the German and Italian States. The triumph of law and order over the revolutions of 1848 was not complete until the present year. The iron heel of arbitrary power had crushed the external manifestations of resistance, but the murmurs of discontent were still audible, and the hopes of liberty were not yet extinguished. But the present year has witnessed the end of all these things. Lombardy and Hungary kiss the rod of the oppressor. French soldiers preserve quiet at Rome. The patriots of Naples and Sicily are in prison or in exile. An Austrian army has quelled the disturbances in Baden, Hamburg and Sehleswig-Holstein. Revolution, anarchy, socialism, red-republicanism, exist no more. Men have turned their attention to trade, to labor and to the pursuits of peace. Instead of political agitation, the people are employing themselves in new enterprises of industry, of commerce and manufactures. The consumption of cotton in France has, in consequence, outrun every former year. Though stationary for many years past, the demand has suddenly awakened to new life. And so, also, in all the disturbed parts of Europe.

5th, The low price of grain in England, the successful working of free trade, and the prosperity in every department of manufactures, have

stimulated the home demand in Great Britain to an extraordinary extent. The exports of cotton fabrics have been encouraged by the peace and prosperity of every part of the world. The overthrow of Rosas has opened the La Plata and its tributaries to British Commerce. The outbreak in Cafficaria is unimportant. The war in Burmah being out of India proper has no influence on trade. The rebellion in China does not disturb the exchanges at the free ports. So that universal peace may be said to prevail.

6th, In the United States the onward march of the cotton manufacture has again been resumed. The tariff of 1846, and the high price of the raw material, had checked the demand for the past three years, but the progress of our country in population, wealth, and enterprise, has surmounted these obstacles, and our course has again been forward.

Of these several causes now enumerated to explain the fair price of cotton for the past year, in the face of the abundant supply, there is not one which is not likely to operate for the coming year. We may, therefore, in considering the supply and the demand for 1853, anticipate full average prices. They cannot be high, for the supply will be too large to permit any check in consumption. They cannot fall even to the average, for the stocks are low, and any further decline would stimulate the demand even beyond its present extraordinary amount.

The supply from the United States will probably exceed the large crop of 1852. The increased number of hands, the large breadth of land planted in cotton under the stimulus of good prices, the favorable character of the season, the fine weather for gathering the crop after the 1st of October, and the lateness of the frost, will tell strongly in favor of a large production. We have indeed had two severe storms, and with one of them a flood, but their injury has not been serious. The rot also has prevailed to an uncommon extent. The boll-worm has been very general, and in some places severe. The caterpillar has done some harm, but beyond eating the leaves from the stalk, its ravages have been local and unimportant. These causes have not produced as much injury as was suffered last year.

age than all the opposing causes of the present season. The receipts at Charleston and Savannah will therefore exceed those of last year. They will also be increased by the extension of the Georgia Railroad further to the West. Instead of 800,000 bales received last year, 900,000 may confidently be anticipated for 1853. In Florida, the storm of October the 9th did such serious injury that we may expect a falling off in the receipts at Apalachicola and St. Marks.

More of this cotton will go to Savannah than usual; and the loss from the caterpillar and boll worm has been considerable. But the increased planting will go far to balance these deficiencies, and but a slight decline may be looked for. From Alabama the receipts will be larger than last year. There was then too little rain; now there has been too much. The river lands produced finely last season; now it is the sandy uplands that are white with abundance. Only a small increase however may be anticipated. From the various districts that send their cotton to New Orleans, the reports are contradictory. The Red River lands are doing very well; the parishes of Louisana have been injured by the worm, the bottoms of the Mississippi have been too wet; the frost has kept off to a very late period in Tennessee; the planting has been large; the season for gathering long, and nearly the same amount will probably be received as for the past year. From Texas the reports have been very favorable, and an increase of 25 per cent may be looked for with confidence. The whole crop of American cotton for 1853 may be estimated (see Table II.) at 3,100,000 bales.

The imports from the East Indies have fallen off largely the last year on account of the moderate prices. This has been the uniform effect of a declining market, and we may look with confidence for the same result hereafter. There is in India an immense production of cotton for domestic use. It has been stated to be as large as the crop of the United States, but no satisfactory statistics have ever been collected to show the actual amount. It is, however, very large, and a high price in Europe attracts a larger portion for foreign export. It may then be brought further from the interior and pay a larger charge

cotton, the heavy expense for freight and insurance for the long voyage, leave but a small balance for the first cost of production, and the carriage from the interior to the seaport. The circle around the marts of exports is thus narrowed, and the amount sent off decreases. Thus the high prices ot 1850 and 1851 raised the English imports to 308,000 and 329,000 bales, against 182,000 in 1849. The moderate prices for the present year have caused the imports at Liverpool to fall off near 100,000 bales. (See Table III.) The low rates current in December and January last, diverted much of the East India cotton intended for export to China, and the European receipts have been small. No increase in these can be expected for 1853, since prices promise to be moderate, as they have been for the last season.

The imports into England from Egypt have increased largely for the past year. The largest amount ever before received was 82,000 bales in 1845. The average for the last three years has been 73,000. But for 1852 the receipts at Liverpool alone on the 8th of October had reached 142,000 bales. Less than usual has been carried to France, and so large an amount for England cannot be anticipated for the coming year, especially as the stocks in Liverpool of Egyptian cotton have advanced 50,000 bales. From Brazil and other places, the Liverpool receipts have increased slightly over last year, namely, from 90,000 to 108,000 bales; they are, however, less than for the two preceding years. The average from Egypt and Brazil for the last four years has been about 250,000 bales, (Table IV.,) and this amount may be looked for in 1853.

The total supply from all these places for 1853 may be estimated (Table V.,) at 3,550,000, or about the same as last year. This is 685,000 bales larger than for 1851, and 500,000 larger than for 1849. But, as the increased demand has taken off the whole of the larger production of 1852 at moderate prices, leaving the stocks now smaller than they have been for several yeas past, (Table VI.,) there is nothing in this large supply calculated to depress prices.

In considering the consumption, we notice a large increase, not only over last year, but over Great Britain in 1851 was 1,663,000 bales, while the largest figures for any previous year were 1,590,000 bales. The deliveries to the trade this year at Liverpool (see Table VII.) where 95 per cent of all English sales are made, exceed those of last year more than 8,000 bags per week. As the factories are now well supplied, the excess will scarcely continue until the 31st of December. But the great regularity in the deliveries forbids any material decline. If the future purchases of the trade should not exceed those of the same period for last year, the consumption of Great Britain would reach 1,992,000 bales for 1852. Nor can we anticipate any less for 1853. The abundance of money, the favorable harvest, the great demand for labor, the high wages in all branches of manufactures, the advance in iron, the prosperity of the shipping interest, the large influx of Australian gold, the universal prevalence of peace in every part of the civilized world, the new machinery erected during the last year, the moderate rates which the raw material promises to bear, the low stocks of goods in the hands of the manufacturers, the large decline in the imports of wool, and its consequent advance in price, and the general prosperity, both in the domestic and in the export trade, authorize the expectation of a still larger consumption for 1853. There is not a single drawback to this anticipation, except the chapter of accidents; but it may be the safest, as the increase for the last year has been so unprecedented, to look forward to a demand only as large as for the present year.

The consumption in France has increased as rapidly as in England. Our exports thither have been 120,000 bales larger than last year, and they have caused no accumulation of stocks either at Havre or at Marseilles. The deliveries at Havre alone have increased (see Table VIII.) more than 80,000 bales, and the amount of American cotton for the whole of France will probably exceed 400,000 bales, against 310,000 for 1851. As large a demand for 1853 may be confidently anticipated.

On the continent of Europe the consumption has been steadily increasing. Its progress is occasionally checked by high prices, but these are only temporary disturbances in its onward march. In Russia, the imports for the three years

1844 to 1846 they were 584,000; and from 1847 to 1849 they were 1,065,000. In the German Zollverein the protective duties they have imposed have given ample encouragement to the home manufacture of cotton goods. The English and American exports of raw cotton to these and other continental States have averaged (see Table IX.) 417,000 bales in 1847 and 1848; 522,000 in 1848 and 1850; and 582,000 in 1850 and 1852. For the incoming year they will almost certainly reach 600,000 bales, which is a trifle less than the amount for the present season.

The consumption of the United States has made a most sudden and rapid progress during the past year. For the three preceding years we had gone backwards. The high price of the raw material, and the imports of cotton goods from abroad, had given a check to our increasing demand, such as we never before had experienced. Hitherto our progress had been uniformly onward. The rapid increase in our population and wealth forbids any retrograde movement in the regular operations of business. Just as our railroads, our shipping, our crop of cotton, or of wheat, or of corn, make steady and invariable progress from year to year, so must our cotton manufactures. There will be at times a backward step in this movement, but it is temporary and brief. It is like the oscillation of a pendulum on a moving surface—the weight swings backward and onward, but the onward motion of the point of support makes it certain that the forward oscillations will more than compensate for the backward movements. The present prosperity of the country authorizes us to expect an advance even on the large consumption of the past season. The amount for 1852 has reached (see Table X.) 603,000 bales, and 625,000 may be anticipated for the coming year.

The whole demand for 1853 will then be estimated at 3,625,000 bales, (Table XI.,) which is 75,000 more than the anticipated supply, (Table V.) Now as the stocks on hand (Table VI.) are very low—lower than they have been for years past, especially if the time for which they would supply the demand be considered—it would seem that prices must keep above their usual average. This has been 8 1-2 cents (Table I.) at the seaports for the last thirteen years, and if the influence of a high rate of exchange and the abundance of gold are to be regarded as real causes of elevating the money value of cotton in our markets, it would seem probable that the present prices (9 1-2 cents at Charleston, October 29th, for good middling) will be fully sustained, and that an advance rather than a decline may be expected.

TABLE I.

AMERICAN EXPORTS, VALUE AND PRICE.

	Total exports in pounds.	Total value.	Pr. cts.
From '40 to '44	3,340,000,000	$267,200,000	8
From '45 to '49	3,788,000,000	284,000,000	7.5
From '50 to '51	1,563,000,000	134,300,000	11.8
Estm'd for 1852	1,000,000,000	90,000,000	9
From '40 to '52	9,691,000,000	825,900,000	8.5

TABLE II.

CROP OF THE UNITED STATES.

	Bales. 1849	Receipts. 1851	1852	Estimate. 1853
Texas,	39,000	46,000	64,000	80,000
N. O.	1,094,000	933,000	1,373,000	1,300 000
Mobile,	519,000	452,000	549,000	560,000
Florida,	200.000	181,000	189,000	175,000
Georgia,	391,000	322,000	326,000	400,000
S. Ca.,	458,000	387,000	477,000	500,000
Oth. plc's	28,000	34,000	37,000	35,000
Total,	2,729,000	2,355,000	2,015 000	3,100 000

TABLE III.

IMPORTS FROM THE EAST INDIES.

Years.	Bales.	Remarks.
1830 to 1834, av. 5 ys.	81,000	Low prices.
1835 to 1839, " " "	144,000	High prices.
1840 to 1844, " " "	282,000	Chinese War.
1844 to 1849, " " "	177,000	Peace and low prices.
1849, Oct. 5, Liv. only	69,000	Low prices.
1851, " 10, " "	171,000	High prices.
1852, " 8, " "	75,000	Moderate prices.
1849, whole yr. G. Br.	182,000	Low prices.
1851, " " " "	229,000	High prices.
1852, " Estimate.	200,000	Moderate prices.
1853, " "	200,000	Moderate prices.

TABLE IV.

ENGLISH IMPORTS FROM EGYPT, BRAZIL, ETC.

	Liverpool, about 1st October.	G. Britain. whole year.		Liverpool, about 1st October.	G. Britain. whole year.
Years.			Years.		
1846.	121,000	153,000	1850.	205,000	257,000
1847.	75,000	266,000	1851.	138,000	182,000
1848.	94,000	137,009	1852.	245,000	
1849.	178,000	245,000	1853.		250,000

TABLE V.

SUPPLY OF 1851 AND ESTIMATE FOR 1852 AND 1853.

	1851.	1852.	1853.
Crop of the U. S. Bales.	2,835,000	3,015,000	3,100,000
Eng. imp'ts from E. Ind.	329,000	200,000	200,000
" " from oth. pla.	181,000	300,000	250,000
Total from these sources	2,865,000	3,515,000	3,550,000

TABLE VI.

STOCKS AT RECENT DATES, CORRESPONDING TO THE CLOSE OF OUR YEAR.

	1849.	1850,	1851.	1852.
U. States, Sept. 1,	155,000	168,000	128,000	91,000
Liverpool, Oct. 8,	582,000	545,000	550,000	507,000
Havre, October 6,	45,000	32,000	36,000	34,000
Total,	782,000	745,000	741,000	632,000

TABLE VII.

DELIVERIES TO THE TRADE AT LIVERPOOL.

	1849.	1851.	wy con	1852	wy con
May 1, bls.	532,000	427,000	25,100	630,000	37,100
June 4,	688,000	619,000	28,100	870,000	39,600
July 2,	636,000	744,000	28,600	1,101,000	38,500
August 1,	993,000	887,000	28'600	1,001,000	38,500
Sept. 8,	1,141,000	1,058,000	60,200	1,340,000	38,500
October 1.	1,220,000	1,107,000	29,900	1,475,000	37,800
Whole year	1,467,000	1,576,000	30,315	.....	.....
				estimated	est.....
Do. G. Brit	1,500,000	1,663,000	32,000	2,000,000	39,000

TABLE VIII.

DELIVERIES TO THE TRADE AT HAVRE.

	1850.		1851.		1852.	
	All k'ds.	U. S.	All k'ds.	U. S.	All k'ds.	U. S.
Sept. 1, bales.	232,000	220,000	224,000	211,000	300,000	290,000
Oct. 1,	250,000	238,000	246,000	234,000	327,000	316,000
Whole year.	306,000	294,000	312,000	302,000	.....	.....

TABLE IX.

CONSUMPTION OUT OF ENGLAND, FRANCE AND THE UNITED STATES.

Years.	Am. exports.	Eng. exports.	Total.
1847.....bales.	169,000	215,000	384,000
1848.....	255,000	192,000	447,000
1849.....	322,000	254,000	577,000
1850.....	194,000	272,000	466,000
1851.....	269,000	269,000	538,000
1852.....	354,000	268,000	625,000

TABLE X.

AMERICAN CONSUMPTION.

	North of Richmond.	Av'ge for 3 years.	Inc. p. ct	South of Richmond.	Total.
1847.	428,000	413,000	...	80,000	508,000
1848.	532,000	461,000	11†	90,000	622,000
1849.	518,000	493,000	7†	100,000	618,000
1850.	487,000	512,000	4†	100,000	587,000
1851.	404,000	470,000	8–	100,000	504,500
1851.	603,000	498,000	6†	100,000	703,000

TABLE XI.

CONSUMPTION OF THE WORLD.

	Result for 1850.	1851.	Estimate for 1852.	1853.
Great Britain,	1,514,000	1,663,000	2,000,000	2,000,000
United States,	487,000	404,000	603,000	625,000
France, of U. S. Exp'ts from G. B. and U. S.	800,000	310,000	400,000	400,000
	562,000	538,000	625,000	600,000
Total.....	2,863,000	2,915,000	3,628,000	3,625,000

AN ENORMOUS TAX UPON FARMERS.—The dog population of the United States is estimated at about two millions, and the expense of keeping them at upwards of $10,000,000 per annum.

ANALYSES OF THE COTTON PLANT AND SEED,

BY THE LATE T. J. SUMMER, OF S. C.

(Concluded.)

SUGGESTIVE REMARKS.

On examining the foregoing Aanalysis of the Cotton Plant and Seed, we see that they abound in the phosphates and alkalies. Drs. Will and Fresenius, in their analysis of the Cereal Grains, show that Wheat also abounds largely in these constituents.

In order to enable the reader to make the comparison, we give the Analysis of Red and White Wheat, as published by them. It is as follows:

	Red.	White.
Potass.....	20.90	30.17
Soda.....	15.01	.....
Lime.....	1.83	2.76
Magnesia	9.12	12.08
Peroxide of Iron.....	1.29	0·28
Phosphoric Acid.....	46.91	43.89
Silica.....	0.15	.....
Charcoal and Sand.....	4.89	9.03
	100.00	98.21

All these constituents being derived directly from the soil, plainly indicate the reasons why the lands in the South are so easily exhausted. The crops extensively cultivated here all require in a great measure the same food from the soil, and hence soils which will not produce Cotton, are alike incapable of producing the Cereal crops. The great benefit derived from the application of Cotton Seed as a manure to these crops, is accounted for from the same causes—an abundance of Phosphates being given in their application to the soil.

FALLOWING.

A system of tillage which carries away annually so large a proportion of these natural essentials to vegetation, and which provides no means of returning them, must necessarily impoverish any soil. A fixed principle in the Agriculture of all countries where the prosperity of the future has at all been regarded, has been the gradual but certain improvement of the soil. This is necessary for the support of increased population, and in the slave States, where there has been such an extraordinary and rapid increase of the laboring population, it should never be lost sight of. The intensity of our Southern sun-shine prevents, in a great measure, the annual coat of grass that supplies vegetable matter to the soil in Northern climates; and the never-ending occupation of the soils, by our system of culture, prevents the nat-

ural improvement which in other countries is carried out by Fallowing. We are well aware that Fallowing is generally objected to in the South, and we think where Fallow is converted into pasture land, and taxed during the whole season for the production of herbage to sustain greedy herds, the system might well come into disrepute. Planters, too, object to Fallowing, and say they have not land enough to allow one-half to lie idle, &c.; but reason and justice to the noble occupation of Agriculture, allows this objection to pass unheeded; and its fallacy is proven by the desert wastes of "old fields," an agricultural feature only common to the New World, and—we blush to say it—only visible to the Southern or Planting States. In Europe, where arable soil compared to population, is a thousand times scarcer than in the Southern States, the Agriculturalists find Fallowing a remunerating system. It is but little understood in American Agriculture, and we may be pardoned for giving the proper details for Fallowing, believing it to be the *cheapest* manner of renovating our soils. A field intended for Fallow, should be deeply ploughed in mid-winter—the deeper the ploughing the better. This is simple preparation, but, nevertheless, necessary; and above all things, keep every description of Stock off the field. The porousness of the soil will facilitate the assimilation of the natural salts of the earth, and atmospheric action, with the dissolving influence of rains, will generally bring to the aid of the succeeding crop a sufficient quantity of these for its production. Late in autumn the herbage should be turned under. This process exerts chemical and natural influence beneficial to the soil. First, as by decomposition of vegetable matter carbonic acid is produced, which is known to act as a powerful solvent of phosphated alkalies. Secondly, those portions of the grass and weeds, not readily decomposible, when admixed with the soil, give it that friability so necessary to easy tillage, and thus aids the agriculturalist in his future labors. A *bastard* sytem of Fallowing might, by the aid of the red and black Tory pea, be judiciously adopted in the Cotton-growing States. Owing to their imperviousness to wet, they can be sown in mid-winter, and vegetating in the spring, without the aid of cultivation, generally make upon ordinarily productive land a sufficient crop to protect it from the sun in summer, and smother out those weeds which are such a pest to cultivated crops. The constituents of the Indian pea—known to be in a great measure derived from the atmosphere—would in all probability furnish a better green crop for subversion than the natural grasses and weeds. Judicious fallowing is, therefore, in our opinion, the cheapest, and by far the easiest mode of renovating and preserving the productiveness of our soils, and if adopted and regularly persevered in, would heighten both the production and value of our Cotton lands.

COMPOST MANURE.

Much may be effected in reclaiming worn out Cotton lands, by a good system of Compost manuring, the benefits of which have been forced upon our agriculturalists by the gradual accumulation of animal manures, and the decomposition of wasted vegetable matter, in and around their barn-yards. It is a system which should be so generally understood and practised, that we deem it unnecessary to make other than a few remarks respecting the increase of this manure and its application. It is a mistaken idea, that the planter gains by hauling into his barn-yard the stalks from his Corn and Cotton fields, in order to convert them into compost manure. Their elements would be returned to the soil by the certain law of vegetable decomposition, if suffered to remain on their fields, and their place in the compost heap can be supplied easily by litter and leaves from the forest, grasses, weeds and muck from the marshes, ditches, and fence-rows on the farm. Weeds, abounding in the alkalies, furnish profitable vegetable matter for composting. In addition to these, we have the rotten wood and forest leaves, which are so abundant on all hands. Muck or peat, being decayed vegetable matter in mass, in this concentrated form contains a large amount of phosphates and alkalies; and when mingled with the droppings of animals, forms a compost highly retentive of substances thus imparted, which it yields most readily to the growing crops to which it is applied. Compost when applied in winter, does not require to be thoroughly decomposed, but when, as in the case on crops where it is applied in the spring, and its elements are demanded immediately by the young plants, its decomposition should be perfect. The compost heaps should be protected from the rains, in order to prevent those salts rendered soluble by moisture, from being washed away. It would add much to the value of compost manure, if the water collecting on the roofs of farm buildings was carried in gutters entirely beyond the yard, and not allowed to flow through it, which would be greatly facilitated by a concentration of farm buildings. Every domestic animal, if properly confined and quartered, when not in use for grazing, would amply repay for the trouble of attending to them; and the filth from the wash-house, stercory, pig-pen, hen-house and pigeon cote, so much neglected amongst us, would, if properly hoarded, furnish most valuable ingredients to the heap. A concentration of all that is essential to the production of our cultivated plants, being found in the component parts of this fertilizer, derivable from the Cereal food consumed by ani-

mals, and the phosphate and alkaline properties of the weeds, grasses, &c., make it at once the best and cheapest form of applying vegetable and animal manures for the immediate production of a crop, at the command of our planters. The quantity might be increased on every plantation in the State, to a degree which would make its manufacture profitable. This, however, will never be done until fewer acres are planted, which will enable them to manure more land.

BONE MANURE.

Bones, according to Berzelius, contain 55 per cent of the phosphates of lime and magnesia. The relative value of the bones of different animals varies in their constituents, and also from the difference in age, their value being increased with years. The bones upon every farm would furnish, if preserved and applied, a considerable amount of the best and most durable fertilizer, which is peculiarly adapted to the production of the Cotton crop. This is proven by the identity of the constituents which compose bones, and are found in the Cotton Plant. The planter in the marl regions—especially where fossil bones and shells abound—has an abundant supply of native phosphate of lime, which only requires pulverization to render it almost as useful as the recent bones. Phosphates in the bones comprise their chief value, which is shown by the fact, that they make a fertilizer equally as valuable, after the fatty matter has been extracted by soap boilers, as before—hence, all old bones might be rendered valuable if properly applied. Guano, the most powerful fertilizer applicable to husbandry, being the ordure of sea-birds, it is known, derives its great value from the amount of bone earth it contains. We therefore regard the annual waste of bones on plantations in the South, where more animal food is consumed than by any other people in the world, as the most suicidal disregard of that economy which has furnished the axiom to agriculturalists—"*that Manure is Wealth.*" Many arguments abound, to favor the adoption of bones as manure amongst us. One is, they can easily be preserved, and it only requires the same labor to do this that it does to throw them away. Another argument in their favor is, that a laborer in a sack, can transport to a distant field bone manure which will furnish more constituents to the crop than can be concentrated in a four horse load of the best stable dung or compost manure. Still another, is the little labor it requires to apply them to the soil. The great secret of applying bones to the soil is found in pulverizing them into as finely separated particles as possible, which fits them for the operation of speedy atmospheric influence, in order that their constituents may be taken up rapidly by the plants. Grinding, crushing and burning are the usual modes; but in order to fit the crushed bones or bone ashes for the greatest production, Professor Von Liebig recommends the following process: Pour over the crushed bones or bone ashes half their weight of sulphuric acid diluted with four parts of water, and after they have been digested for twenty-four hours, add one hundred parts of water, and sprinkle this mixture over the field immediately before ploughing. By its action in a few seconds, the free acids uniting with the bases in the earth, a neutral salt is formed, in a very fine state of division. Experiments instituted on soils, for the purpose of ascertaining the action of manure prepared in this manner, have distinctly shown that neither grain nor kitchen garden plants suffer injurious effects in consequence, but that, on the contrary, they thrive with much more vigor after its application. (*Vide Von Liebig's Organic Chemistry, p.* 230.)

Another theory of application, by the great French Chemist, M. Dumas, the substance of which we give from his article, cotained in *Comptes Rendeus*, Nov. 30, 1846, p. 1018, "*On the Manner in which Phosphate of Lime enters Organized Beings,*" is interesting. He remarks, that the phosphate of lime being insoluble in water, nevertheless penetrates, and is deposited in their structure; and bones containing it are slowly disaggregated by the soil, and disappear after a time, under the influence of rains. The investigations of M. Dumas discovered two causes producing these effects—the one acting rarely and feebly, the other constantly, and with great intensity.

The first resides in a property possessed by sal-ammoniac, which facilitates the solution of phosphate of lime. Though this salt dissolves a noteable quantity, and exists in all running waters, yet this slight proportion renders its action in this respect inconsiderable.

The second is found in the action of carbonic acid; and in this, the true solvent of phosphate of lime is to be found, for water impregnated with carbonic acid dissolves large quantities of phosphate of lime. M. M. Berzelius and Thenard had remarked the alkalies and ebullition, by driving off or neutralizing the carbonic acid, which precipitated it.

M. Dumas, believing the action of carbonic acid to be such as above stated, did not doubt the effect it would produce on the bones themselves. He therefore introduced plates of ivory into bottles of Seltzer water, (which contains a great deal of carbonic acid,) and they were as much softened in twenty-four hours as if acted upon by dilute hydro-chloric acid, which is also a powerful solvent of phosphate of lime. The Seltzer water was found loaded with phosphate of lime, and the experiment proved the action of carbonic acid as its solvent, to be rapid and certain. I am

sure this discovery will be of importance to the agricultural world.

I would call the attention of physiologists to to this property in carbonic acid, as it satisfactorily explains, the transformation of the phosphate of lime into plants. Of course, it would not be practicable to dissolve the phosphate of lime, by the aid of Seltzer water, but the preparation of bone ashes by its known and powerful constituent, might be rendered available in the following manner: Where bone powder or ashes is intended for manuring soil destitute of vegetable matter, let them be mixed with leaves or other organic matter, and its decomposition with the aid of the rains and atmospherical influence, will create a sufficient quantity of carbonic acid to assimulate the phosphates in such a form that they will be readily taken up by the organism of the plants.

How easily could a planter manure a few acres of Cotton with bone powder or ashes? When all the bones are hoarded as gold, and their true value known, they will be appreciated. Then a bone mill for crushing, and simple apparatus for their chemical reduction, will be as essential to producing the crop as a grinding mill is to prepare the grain for the food of man.

WOOD ASHES,

Containing phosphates and alkalies, to a considerable extent, may be used advantageously as a manure for Cotton.

LIME,

Being useful in decomposing and ameliorating adhesive soils, might be profitably employed in the permanent improvement of Cotton lands. Common potter's clay, diffused through water and added to milk of lime, thickens immediately upon mixing, and if the mixture be kept for some months, and an acid be added, the clay becomes gelatinous, which is the effect of the admixture of the lime. The lime, in combining with the elements of the clay, liquifiies it, and, what is more remarkable, liberates the greater portion of its alkalies. These interesting facts, so important to the scientific world, were first observed by M. Fuchs, at Munich, and led to the explanation of the effects of caustic lime upon the soil, which furnishes the agriculturalist with an invaluable means of opening it and setting free its alkalies—substances so indispensable to the production of his crops. (For further facts concerning lime, and its application to Agriculture, see *Liebig's Organic Chemistry*, which should be in the hands of every one.) The lime lands of the West producing abundant crops of Cotton, so long as furnished with vegetable matter, shows that lime alone, upon exhausted soils, would prove a doubtful aid.

We could add suggestion after suggestion, relative to the aids to be applied to the production of Cotton upon exhausted soils; but these being the most important, we shall dispense with the boundless materials which lie abundantly around us, and only need transporting to our fields in order to benefit them. It was a matter of surprise to Professor Von Liebig, that any soil not furnished by artificial means with the preponderating constituents of the Cotton Plant and Cotton Seed, should produce a crop abounding in the phosphates. This leads me to further investigations, and a rich field of research still lies unexplored, in the analytical examination of the Cotton Soils of the South and West.

From DeBow's Review.

THE HISTORY OF COTTON MANUFACTURES.

(Continued.)

The cotton fabrics of India became common in England at the commencement of the eighteenth century, and were complained of as a great evil by a host of pamphleteers. In the year 1700 an act of the British Parliament forbade the importation of India silks and printed calicoes for domestic use, either as apparel or furniture, under a penalty of £200 on the wearer or seller. This was done to "avert the ruin of English manufactures, and revive their prosperity."

The manufacture of cotton, as we have seen, was general in India, and had attained a high excellence in the age of the first Greek historian, that is, in the fifth century before Christ, at which time it had already existed for an unknown period; yet eighteen centuries more elapsed before it was introduced into Italy or Constantinople, or even into the neighboring empire of China. Though so well suited to hot climates, we have seen that cottons were known rather as a curiosity than as a common article of dress in Egypt and Persia, five centuries after the Greeks had heard of the *dendra eriophora*, the wool-bearing trees of India. In Egypt the manufacture never reached any considerable degree of excellence, and the muslins worn by the higher classes have always been imported from India. In Spain, the manufacture, carried thither by the Arabs, flourished for a time, and then became nearly extinct. In Italy, Germany and Flanders, it maintained only a sickly and ignoble existence.

In the downfall of the Roman Empire, the arts and commerce perished. We have at this period only a few incidental notices of the cotton manufacture in the East. Omar, the successor of

Mohammed, is described as "preaching in a tattered cotton gown, torn in twelve places;" and Ali, his fellow fanatic, wore, at his inauguration as Caliph, "a thin cotton gown tied around him with a girdle." Whence it is inferred that cotton was a common article of dress in Arabia at the time of the Hegira, A. D. 622, and had probably been so for many generations.

There is little doubt that the Mohammedans carried along with their conquests into the western world the arts of growing and manufacturing cotton, and that they also introduced into India many improvements in the oriental manufacture of cotton, suggested by their superior intelligence and inventive genius.

In Spain, the cotton manufacture flourished during the thirteenth, fourteenth and fifteenth centuries, and then declined. The cotton plant still grows wild in many parts of Spain. Barcelona was famous for its cotton sail-cloth, large quantities of which it furnished to other nations. The Spanish term *fustaneros*, from which comes our word *fustian*, denotes manufactures of a stout, substantial kind of cotton goods first manufactured in Spain. Cotton *paper* was also probably first made in Europe by the Spanish Arabs, who brought the art from the East, some say Egypt, others Bucharia. The Arabs also manufactured linen paper at Valencia. The religious antipathy, however, which existed between the Moors of Spain and the Christians, prevented the propagation of the oriental arts in the West; and when the Saracens were driven from Spain, the arts which they had brought to that country perished.

The Portuguese were the first to import into Europe the cotton stuffs and muslins of India, but they never attempted the manufacture of cotton in Portugal. The Dutch, however, not only imported cotton fabrics largely from India, but also, towards the latter end of the sixteenth century, began to manufacture them at home. Long prior to this period a manufacture of indigenous cotton had existed in the southern parts of Italy, where, particularly along the gulf of Taranto, the plant had been cultivated since the eleventh century. In Calabria the plant was biennial. The soil of southern Italy is said to have been very favorable to the culture of cotton.

The manufacture of cotton in England, did not commence until about the beginning of the sixteenth century. They brought their raw cotton from the Levant, Lisbon and Sicily. The first cotton manufacturers in England were Protestant from the Low Countries, whither they were driven by the religious persecutions of the court of Spain. They commenced the manufacture at Bolton and Manchester.

The cotton fabrics first manufactured in England were partly of linen, owing to the scarcity of cotton. It was not until 1773 that fabrics purely of cotton began to be made in England. These were produced by Messrs. Strull & Need, the partners of the illustrious Arkwright; but no sooner were they produced, than it was discovered that a law existed, expressly *for the encouragement of the arts*, prohibiting the sale of such fabrics. Application was immediately made to the British Parliament to repeal so unwise a law, but it required much time and expense to convince that legislative body of the propriety of repealing so preposterous an enactment. This it finally did, on condition, however, that three pence a square yard should be paid by manufacturers on all printed cottons or calicoes.

Men have often complained that the world has been cursed by physic and false medical philosophy; but it may well be questioned whether society has not suffered much more from the operations of *stupid laws*; for what step forward has civilization ever made, that has not found a stumbling-block in some stupid enactment, if not some entire code of laws? Commerce and manufactures especially have sufferred, and still continue to suffer by bad laws.

In modern times, cotton has attained to an importance among the vegetable productions of the earth, which could not have been even dreamed of a few centuries ago. The manufacture of cotton, though it now affords employment and subsistence to hundreds of thousands of persons, is almost wholly the consequence of discoveries and inventions, made in England and in this country since the middle of the last century. Previous to that time the manufacture was confined to the narrowest limits. Owing to the difficulty of separating the wool from the seed, its price, so long as this operation had to be perfbrmed by the hand, was necessarily high; while the cost of its spinning and weaving by the wheels and looms in use previous to the year 1760, added so much to

its price, that cotton articles were suited only to the use and demand of the higher classes of society.

It is a very remarkable fact, that no material improvements in the art of manufacturing cotton fabrics took place, during the long period from the earliest historical dates down to the middle of the last century. The Hindoo, at the present day, uses the same rude and simple implements in manufacturing his fabrics that were used when Heroditus wrote. All the great improvements in the art of manufacturing cotton and woolen were reserved for the present age.

The first great improvement was an invention of the spinning-jenny, by Hargreaves, in 1767, by which one individual could spin 120 threads at once, or, in other words, perform, in any given length of time, the work of 120 persons! Previous to this invention, every thread used in the manufacture of cotton, wool and flax, throughout the world, was spun singly by the fingers of the spinner, with the aid of that rude, antique, and classical instrument, the *domestic spinning wheel.* The jenny of Hargreaves, however, was fit to spin only the softer descriptions of yarn, or that used as *weft*, it being unable to give the thread the firmness and hardness required for *warp*. Two years afterwards, this deficiency was removed by the genius of Arkwright, who completed what Hargreaves had begun, by inventing the spinning-frame—a wonderful piece of machinery, which spins any number of threads, of any degree of fineness and hardness, leaving to the hand of the operator merely the feeding of the machine with cotton, and joining the threads when they happen to break.

Five years later, in 1774, the genius of Compton conceived the happy idea of combining in one machine the inventions of Hargreave and Arkwright, thus erecting an instrument turning one hundred spindles at once—hundred-handed, like Briareus and his giant brothers of old.

At first this astonishing invention was turned by hand, and Kelly was the first to apply to it the waters of the Clyde. Watt next applied the more potent agency of steam, thus causing the two thousand spindles to whirl at once in a single machine.

But the spinning machinery awaited another improvement. By an ingenious contrivance, Roberts succeeded in rendering the hand even of the spinner unnecessary, the machine doing the entire work unaided. Now, in our cotton factories may be seen several thousand spindles, in a single apartment, revolving with inconceivable rapidity, with no hand to urge their progress or guide their operations—drawing out, twisting, and winding up, as many thousand threads, with unfailing precision and indefatigable patience and strength—a scene as magical to the unfamiliarized eye, as the transformations of oriental tales.

Nearly at the same time that the spinning department was thus wonderfully improved, Doctor Cartwright, a clergyman of Kent, England, invented the *power-loom.* But there was still another thing necessary to complete this astonishing career of discovery. Without a vastly increased supply of the raw material, and at a much lower price than it had previously brought, the inventions of Hargreaves, Arkwright, Compton, Roberts and Watt, would have been of comparatively little value. This last, and perhaps the most important step of all, was the work of an American. Mr. Eli Whitney, a native of Connecticut, by the invention of the *cotton-gin*, conferred upon the world a machine which has done more for cotton growers, manufacturers, commerce and civilization, than any other one machine that was ever invented. Without the cotton-gin, all the inventions for spinning would be comparatively useless, and even the steam-engine itself would be stripped of half its value as a manufacturing engine. Where would now be all our immense exports of raw cotton, all the vast cotton manufacturing establishments of the world, and all the vast commerce of nations in cotton fabrics, if we had not the cotton-gin of our illustrious countryman, Eli Whitney? We often talk of erecting monuments to the memory of our great statesmen and literary men; but certainly Eli Whitney deserves a monument, whose top would overlook the whole cotton region of North America; and such monument should be erected by the planters of the Southern States.

(*To be continued.*)

☞ Sub-soil sound land, that is, land which is not too wet, and you will by that means conduce to its productiveness.

MARL AND MARLING.

SILVER BLUFF, SOUTH CAROLINA, January 5, 1846.

Dear Sir: I embrace the earliest opportunity my other engagements have allowed me, of fulfilling my promise to reply with the request of your Society, to give them such information as I possess in regard to Marl. I am happy to learn that an interest in this matter has been excited in your county; and if, in what I am about to say, I shall fail to meet all the inquiries which might be made, it will afford me great pleasure to communicate more fully on particular points, at any time hereafter.

Aware of the strong prejudice existing too generally among Farmers against everything *new* in farming, it may not be amiss for me to begin by saying, that however new to us Marling may have been a few years ago, it is in point of fact one of the oldest agricultural operations of which we have any authentic record. Pliny, who wrote during the first century of our era, mentions Marl as having been long in use among the Greeks, and also in Gaul and Britain. He describes pretty accurately the appearance of all, or nearly all, the kinds of marl now known. He even specifies the peculiar effects of each on soils, and states the length of time these effects were supposed to last, which was from 10 to 80 years, according to the quality of the marl and the land marled. Varro, who wrote a century before Pliny, mentions having seen fields in Gaul covered with a "white fossil clay," and also describes several kinds of marl as in common use.

Although these writers, because ignorant of the discoveries of modern science, made great blunders in attempting to account for the extraordinary influence exerted by this earth on vegetation, and to discriminate between its varieties, still it is unquestionable that the *leucargillon* of the Greeks, the *fossicia creta* of Varro and the *marga* of Pliny, were no other than the same kinds of marl we find here, and which at this day so many enterprising farmers, both in Europe and America, are actively and extensively engaged in spreading over their fields, and which have been continuously used for that purpose more or less from the remotest ages. Marling, then, is certainly no novelty—no untried experiment that can for a moment be classed among the modern humbugs.

There is no question, however, that the want of chemical knowledge has in time past led to great errors in its application and consequent failures—often to serious injury from its use. When the element in marl which gives it its chief virtue, and also its certain and its probable chemical action on the soil and its growth, were all unknown, every new application of it was to some extent an experiment which might or might not succeed. It is a great proof of its universal value, that so many succeeded as to maintain its reputation and consequent use. Mr. Ruffin, of Virginia, was the first in this country to explain on scientific principles the true nature of marl, its mode of action and the proper manner of applying it, and to carry his theory through the ordeal of successful experiment. He is the founder of the marling system among us, for which he will be long and deservedly ranked among public benefactors. His "Essay on Calcareous Manure" contains everything that it is important to know about marl and marling. Throughout my operations it has been my guide, and it is still, I believe, far in advance of anything that has yet been published in any other country, on the subject. If I thought every member of your society would procure a copy of that essay, and peruse it carefully, I might close my letter here, by earnestly recommending them to do so. It is with the hope of inducing some of them to do it, as well as to testify my respect for them, by responding to their enquiry, that I proceed.

Marl, as correctly defined by Mr. Ruffin, and now known in this country, is calcareous earth; that is, earth containing lime. The lime found in it is united for the most part with carbonic acid, and is therefore called carbonate of lime. Azote has been found in marl also, and magnesia is not uncommon. Besides these, it contains sand and clay in various proportions, and occasionally a green sand highly prized as a manure, on account of its being rich in potash. All of these constituents are valuable to the farmer. But it is the quantity of carbonate of lime in it which gives its character to Marl, and by which it is estimated when it is called rich or poor.

Nothing is more deceptive in appearance, and the most experienced are liable to great mistakes, if they attempt to estimate its value by the eye, and without employing the proper chemical test.

There is a rock found in abundance in your county, and which is of great value for other purposes, that has deceived many. It seems to be a mass of shells; but the fact is, they are only effigies, or casts from which every particle of lime has been long since washed away, and sand deposited in its place. There is also a fine, soapy earth, usually of a pale ash color, though sometimes darker, that many have regarded as a very rich marl. This is what was formerly, and by foreign writers is still denominated clay marl. It seldom contains much lime, and is generally wholly destitute of it even when found in marl beds. This soapy feeling is a very uncertain indication of lime. Where it is observed in marl, it is usually owing to something else, chiefly to magnesia or alumina. A marl is found whiter and harder than the earth to which I refer, but of the same lamellated structure, and also a somewhat soapy touch, that is exceedingly rich in lime—that at Shell Bluff containing 90 odd per cent of the carbonate. It yields readily to the knife, crumbles when exposed to a severe freeze, and is altogether the most valuable marl we have. It is unfortunately not met with in large quantities in our formation. In our marl beds immense quantities of large shells are generally found. Inexperienced marlers have been known to spread these on their land. But they are of little or no value, unless burned or crushed. They were deposited where they are found before the human race inhabited the earth, and being for the most part sound yet, will yield little or no lime to the soil in our day. Even the masses of much smaller, conglomerated shells, though very rich in lime, are not among the most valuable marls, unless broken up and pulverized to a considerable extent. There is a marl abounding with us, which to the naked eye seems to be mere sand, that is much more valuable, though it does not contain two-thirds of the quantity of carbonate of lime; it mixes at once with the soil, and exerts its full influence in a very short period. The most valuable marl, practically speaking, that is found in any quantity at Shell Bluff—and will be found in your marl beds, for the formation is the same—is composed of very fine shells, scarcely discernible, which are loosely cemented together, and readily fall apart. It is plish, yellow or light brown. The most abundant marl found in our formation is hard and compact, of a grey color, containing fifty to sixty per cent of lime, and crumbles, on exposure to the seasons, and in handling.

But, as I have said, the value of marl cannot be estimated by its appearance. Between earth which contains 75 per cent of carbonate of lime, and that containing 20 per cent, or even none at all, the most experienced are far oftener than otherwise unable to distinguish without using the proper tests. These are so readily to be procured, and in fact the analysis of marl, so far as to ascertain the quantity of carbonate of lime, is so very simple an operation, that the marler should leave nothing to conjecture on this point. Earth containing any notable portion of carbonate of lime, will effervesce if thrown into vinegar, or almost any acid. But the best test is muriatic acid, a single drop of which will produce immediate effervescence whenever there is carbonate of lime. To discover the precise quantity of carbonate of lime in any marl, it is only necessary to have this acid, a pair of common apothecaries' scales with weights, and a wide mouthed vial. Dry the marl thoroughly on a shovel, and pound it in a mortar to a fine powder. Fill the vial about one-third with the muriatic acid diluted with two parts of water to one of acid, and balance it exactly in the scales, with weights of any kind. Then add, very slowly, 100 grains of the powder previously weighed, taking care not to make it effervesce so rapidly as to throw any of it out of the vial. When the effervescence has completely ceased, blow gently into the mouth of the vial, with a common bellows, to expel any of the carbonic acid gas which may have remained in it in consequence of its being heavier than the atmospheric air. Weights to the amount of 100 grains must now be put in the opposite scale to balance the 100 grains of powdered marl put into the vial. It will be found that in consequence of the escape of carbonic acid in a gaseous form, the scale with the vial will rise. Then put weights into it until the scales are once more exactly balanced; the number of grains put in the scale with the vial will of course indicate the weight of the carbonic acid which has escaped. Now, carbonate of lime contains

in 100 parts, nearly 56 parts of lime and 44 of carbonic acid. If then 44 grains have escaped in your analysis, the specimen is pure carbonate of lime. If only 22 grains have escaped, then it contains but 50 per cent of carbonate of lime. And so in proportion to any quantity of carbonic acid which may have been expelled. In practice, it will be found most convenient to use 50 grains of the powdered marl. The value depending mainly, as stated, on the quantity of carbonate of lime which it contains.

The value of lime for agricultural purposes, is not only established by the experience of all ages, and so far as we know, of all countries, but must be obvious, when it is known that chemical analysis has detected it as a constituent of every vegetable that grows on the surface of the earth. It is also the chief element of the bones of every animal—even of those that feed on grass only. It is therefore not only beneficial, but indispensable to the growth of all kinds of vegetation. The all-bountiful Creator has diffused it over the whole globe, as extensively as almost any known substance. But like all His gifts, it has been, for wise and good purposes, no doubt, unequally distributed. That it is placed, in some form and to some extent, wihtin the reach of all plants, is certain, since they all contain it. And a late scientific writer on Agricultural Chemistry in our country, has attempted to prove that all—even the poorest soils—possess an ample supply of it to furnish heavy crops of vegetation for countless years to come. If this were true, it would be worse than useless to expend labor in spreading it over our lands; and millions of farmers, besides myself, have acted very foolishly—and you would do well to think of no more marling. But this is not the case.

There are a great many soils in which the chemical tests now known have failed to find a trace of it. Such, I will venture to say, it is with regard to most, if not all of the lands in your county; though I am aware you have had pretended analyses made, which exhibited large proportions of lime. The reasoning of the writer alluded to, is this: All soils are formed by the disintegration and crumbling of rocks. Most rocks contain lime, especially those which disintegrate most readily and form soils. He calculates necessary to create a soil of a certain depth, and thence infers that there is so much lime in the land. There is no doubt that the rocks from which your soil and mine were formed, contained lime to the amount estimated. But it is equally certain that these rocks, in their transition from one state to another, were subjected for an indefinite period to the action of the water. I am speaking particularly of our immediate section of country. The ocean once undoubtedly covered it as high up as the Falls of our rivers and the belt of Sand-Hills which runs through the middle of the districts of South Carolina and Georgia, and held it as permanent domain. During this period, our marl beds were deposited—possibly also our present surface of earth. But whether that be so or not, and whether the surface we now cultivate belongs to the Eocene formation, as these marl deposits are supposed to do, or to the Post Pliocene, or, as is most probable, to the Diluvial, it is evident, from the irregular stratification of different kinds of earth, and the rounded pebbles on and in it, to a considerable depth, which could have been rounded only by the action of the water, that the whole of it, like the sand and clay now brought down our streams, has become, at some remote period, drifted from a higher region, and deposited by water here. The lime in the rocks being soluble under circumstances which must have attended the drifts, was retained and carried away in the currents. Our marl beds were probably deposited at a much earlier geological era, and have no connection with the soil on our present surface, but were upheaved or denuded in some of those great convulsions to which our globe has been everywhere subjected. That our lands are for the most part destitute of lime is certain. That it has been taken from them in this way is more than probable. The masses of silicified shells to which I have already alluded, and which are so abundant in your county, prove that the lime may be entirely carried off by water.

But if there is no lime in the soil, from what source do the growing plants derive this indispensable constituent, may be well asked? It has been often asked. Nature has not revealed, and science has as yet failed to discover an answer satisfactory to all. Whether, as is conjec-

plant is sufficiently powerful and comprehensive to create the requisite modicum—or whether it can, as others suppose, by some galvanic agency, extract it from sources where its existence has not yet been detected by chemical re-agents, is yet a mystery. But this much, experience has established and science demonstrated, that where lime cannot be found in fair proportions in a soil, the health and vigor of the plants growing on it can always be materially improved by a judicious application of it. And to this conclusion common sense, without experience or science, would lead every one who is aware that it is invariably an element in all vegetable matter.

(*To be continued.*)

THE RESULTS OF MANURE ON A PEAR TREE.—In a late number of Moore's *New Yorker*, Linus Cone, of Oakland county, Michigan, informs us of an interesting experiment with high manuring. Twenty-five years ago, he planted a *Summer Bonchretien* Pear tree, the culture of which, after a few years, was neglected. The fruit at first was fine, specimens often weighing nearly a pound each, but afterwards grew gradually smaller, till nearly worthless. The tree was then well pruned, washed with lye, the ground well spaded—with no improvement. Last spring, twenty bushels of manure from a blacksmith shop, consisting of dung, parings of hoofs, cinders, &c., was spread and dug in. Twenty bushels of fine, high-flavored fruit, was the result, the same season.—*Albany Cultivator.*

TO DRESS SALT FISH.—Soak it in cold water, according to its saltness; the only method of ascertaining which, is to taste one of the flakes of the fish. That fish which is hard and dry will require 14 hours' soaking, in two or three waters, to the last of which add a wine-glassfull of vinegar. But less time will suffice for a barrelled cod, and still less for the split fish. Put the fish on in cold water, and let it simmer, but not actually boil, else it will be tough and thready. Garnish with hard boiled eggs, the yolks cut in quarters, and serve with egg-sauce, parsnips, or beets.

Another method is to lay the piece you mean to dress all night in water, with a glass of vinegar; boil it enough, then break it into flakes on the dish; warm it up with cream and a large piece of butter rubbed with a bit of flower, and serve it as above with egg-sauce.—*Agricultor.*

☞ The chopping or grinding of grain, to be fed to stock, operates as a saving of at least 25 per cent.

THE COW AND THE DAIRY.

BREEDS OF CATTLE.

BY J. S. SKINNER.

The breeds of cattle vary in different districts, from the small hardy varieties of the North Highlands, to the bulky and handsome breeds of the Southern parts of England. It has been customary to class the whole according to the comparative length of the horns—as the long-horned, short-horned, middle-horned, crumpled-horned, and hornless, or polled breeds. Besides these, there are many intermixed breeds. The middle-horned Cows, which are found in the North of Devon, the East of Sussex, Herefordshire and Gloucestershire, in England, are among the most valuable and beautiful varieties of the animal.

Whatever be the breed, there are certain conformations which are indispensable to the thriving, valuable Ox or Cow. If there is one part of the frame, the form of which, more than any other, renders the animal valuable, it is the chest. There must be room enough for the heart to beat and the lungs to play, or sufficient blood for the purposes of nutriment and strength will not be circulated; nor will it thoroughly undergo that vital change which is essential to the proper discharge of every function. We look, therefore, first of all, to the wide and deep girth about the heart and lungs. We must have both; the proportion in which the one or the other may preponderate will depend on the service we require from the animal; we can excuse a slight degree of flatness of the sides, for he will be lighter in the forehead, and more active; but the grazier must have width as well as depth. And not only about the heart and lungs, but over the whole of the ribs, must be both length and roundness; hooped as well as deep barrel is essential; there must be room for the capacious paunch—room for the materials from which the blood is to be provided. The beast should also be ribbed home, and there should be but little space between the ribs and the hips. This seems to be indispensable in the Ox, as it regards a good healthy constitution and a propensity to fatten; but a largeness and drooping of the belly, notwithstanding that the symmetry of the animal is not improved, are considered advantageous in the Cow, because room is thus left for the udder; and if these qualities are accompanied by swelling milk veins, her value in the dairy is generally increased. This roundness and depth of the barrel, however, are most advantageous in proportion as found behind the point of the elbow, more than between the shoulders and the legs; or low down between the legs, rather than upward toward the withers; for the heaviness before, and the comparative bulk of the coarser parts of the animal, are thus diminished, which is always a very great consideration. The loins should be wide; of this there

can be no doubt, for they are the prime parts; they should seem to extend far along the back; and although the belly should not hang down. the flanks should be round and deep. Of the hips, it is superfluous to say that, without being ragged, they should be large; round rather than wide, and presenting, when handled, plenty of muscle and fat. The thighs should be full and long, close together when viewed from behind, and the farther down they continue close the better. The legs may occasionally vary in length, according to the destination of the animal; but shortness is a good general rule, for there is an almost inseparable connection between length of leg and lightness of carcass, and shortness of leg and propensity to fatten. The bones of the legs (and they are taken as a sample of the bony structure of the frame generally) should be small, but not too small—small enough for the well known accompaniment, a propensity to fatten—small enough to please the consumer—but not so small as to indicate delicacy of constitution and liability to disease. Lastly, the hide, the most important thing of all—should be thin, but not so thin as to indicate that the animal can endure no hardship; moveable, mellow, but not too loose, and particularly well covered with fine and soft hair.

Of the various breeds and cross-breeds of Cows now in use, there are a few which enjoy the best reputation. We may name, for example, the *Old Yorkshire Stock*, a cross between the *Teeswater* and *Holderness* breed; the *Long-horned* or *Lancashire* breed; the *Short-horned* or *Dutch* breed; the *Middle-horned* breeds of Devonshire, Sussex and Hereford; the *Ayrshire* breed; the *Alderney* breed, &c. Some of these merit particular attention.

AGRICULTURAL CONVENTION.

In accordance with the call previously made by the Executive Committee of the Southern Central Agricultural Association, a number of Southern Planters convened in the city of Macon, Ga., on the 26th of October, 1852, for the purpose of forming an Association of the Agriculturalists of the Slave-holding States. Besides a large number of the members of the State Society present, the following gentlemen appeared as delegates from the adjoining States:

From South Carolina.—Col Wm. DuBose, J. W. Harrison, Thos. Smith, Col. A. G. Summer.

From Virginia.—Dr. Butler.

From Alabama.—Dr. N. B. Powell, Dr. N. B. Cloud, Wm. H. Chambers, R. C. Shorter, Bolling Hall, A. G. McGehee, J. S. Reese, Joseph Hall, Geo. W. Haile, Elbert A. Holt, R. J. Glenn, Dr. Wm. H. Rives, Peter Ware, Joseph L. Moultrie, Amos Travis Jr., L. H. Pierce, Wm. O. Ormsby, Wash. Pollard, Mr. Griswold.

From Mississivm.—Col. Thos. G. Blewett, Dr. A. N. Jones, John Morton, Dr. W. Burt.

From Tennessee.—F. Keith.

From Louisiana.—S. Craig Martyn.

From Florida.—Col. Williams, Judge Mc Gehee.

The Convention was organized by calling Dr. D. A. Reese, of Georgia, to the Chair, and the appointment of Wm. H Chambers, of Ala., as Secretary.

The objects of the Convention were explained by Dr. W. C. Daniell, of DeKalb, who also introduced the following resolutions:

Resolved, That the members of the Agricultural Association of the Slave-holding States, to be organized as hereinafter recommended, be composed of such citizens of the same, as taking an interest in Agriculture, desire to become members thereof; and of delegates from State and local Agricultural Societies; and from States or parts of States.

Resolved, That such persons as above designated convene at Montgomery, Ala., on the first Monday in May next, and organize an Agricultural Association of the Slave-holding States, under such provisions as to them may appear best calculated to fulfil the purposes of their organization, which shall hold its meetiugs in succession in all the Slave-holding States that may participate in the Association.

Resolved, That a Committee of Correspondence to consist of seven, be appointed to carry into effect the foregoing resolutions.

The resolutions were unanimously adopted, and the following gentlemen appointed to compose the Committee of Correspondence:

Dr. W. C. Daniel, of DeKalb; Gov. Geo. R. Gilmer, of Lexington; Hon. Asbury Hull, of Athens, Hon. Thomas Stocks, of Greensboro; Hon. James Hamilton Couper, of Darien; Col. James M. Chambers, of Columbus; Maj. Joel Crawford, of Blakely.

A communication, favoring the purposes of the Convention, was received from Maj. Lewis C. Gaines, of Fla., and read, after which the Convention adjourned *sine die*.

DAVID A. REESE, *Ch'mn.*

Wm. H. Chambers, *Secretary.*

Cotton Manufactures in Russia.—According to a recent official report upon the manufactures and domestic trade of Russia, there are in the Empire 158 manufactories of cotton, divided among thirty-six provinces. The amount of the goods manufactured is abont 1,500,000 pieces, estimated at 3,000,000 silver rnbles, and giving employment to about 14,300 individuals. About half of these goods are printed, adding a value to the above of some 2,000,000 silver rubles, and employing some 5,000 laborers additional.



American Cotton Planter.

MONTGOMERY, ALA., MARCH, 1853.

N. B. CLOUD, M. D., EDITOR.

Our Agents.

Wm. Strickland, Book-seller, No. 28, Dauphin street; Boullemet's Literary Depot—corner of Royal and Dauphin street; H. H. Carver & Co., Battle House Book Store, Mobile; from any of whom the back numbers may be had.

A. P. Pfister, Exchange Corner; C. R. Hansford, Market street, Montgomery.

With *The American Cotton Planter*, our agricultural friends will find all the new and valuable publications of the day, either literary or agricultural, at the above-named Book Stores.

Mr. Amos Travis is our agent at Gainesville, Sumter county.

G. M. Reynolds and Mr. Turner are our travelling agents.

☞ In this number of the *Cotton Planter*, we furnish its readers with the very judicious remarks of the late Thomas J. Summer on fertilizers and their practical application, as suggested in the analyses of the Cotton Plant and Seed, which may be found in the February number.

The attentive reader will not fail to observe the striking analogy thus shown between the elements of wheat and the cereal crops, and the seed of Cotton. From this fact the planter will, or may draw several most important practical considerations. Why send to St. Louis or Cincinatti for flour, when we can so easily raise it at home? The advantages to the planter directly, in the retention of so much gold at home, is, perhaps, not a moiety, when compared to its indirect influence upon his interest, in the diversity of labor at home—a fact of itself worth at least half the value of the home consumption of wheat. This article is furthermore valuable in pointing out other facts equally interesting to the great planting interests of the country. It indicates the value of a great many articles that contain in their elements richly, the food of both cotton and grain. In the April number of our paper, we shall furnish a brief memoir of Mr. Summer's life and character, which we desired to have appear in this number, but our unavoidable absence to Mobile prevented.

AGRICULTURAL ASSOCIATION.

We ask the especial attention of our Agricultural friends to the proceedings of the Agricultural Convention, held in Macon, Ga., in October last, published in this number of *The Cotton Planter*. It will be observed that this Convention was held in accordance with the call previously made by the Executive Committee of the Southern Central Agricultural Society. There were delegates present, as will be further observed, from some seven or eight of the planting States. The object of the Convention was, to take into consideration the propriety of forming an Agricultural Association of the slave-holding or planting States. The propriety of such organization was unanimously and most heartily hailed by the members of the Convention; whereupon it was resolved, that such Association be organized, and the first Monday in May next recommended as the day when such persons as are designated in the first resolution, shall meet in the city of Montgomery, Ala., for that object.

We ask the citizens of Montgomery, many of whom are engaged to some more or less extent in Agricultural pursuits, and every one immediately interested in the success of the Agriculturalist, what *response* they intend to make to this contemplated Convention of the practical, working and productive men of our common country? We had the honor, in the Convention, of nominating Montgomery, as the point most accessible—most appropriate, as the Capitol of the great planting State, Alabama—and, indeed, the centre of the planting region of our country. The nomination was approved by the Convention. No citizen of Montgomery being present in the Convention at the time, we took the responsibility of commending the public spirit, enterprize and social character of the citizens of Montgomery to the Convention; and we gave them (the members of the Convention) a warm, cordial invitation to visit Montgomery the first Monday in May.

We hope to see the citizens of Montgomery notice this contemplated assemblage, in a manner worthy, not only of the noble cause, but of the public spirit of the city. We expect to see ten thousand agriculturalists assembled in Montgomery on the occasion! Why not? A nobler object never claimed—never engaged the attention of the slave-holding or planting States—the organization of an Agricultural Association of the planting States! We reiterate the invitation—come one, come all. Assemble in your primary, neighborhood and county meetings; appoint your delegates; send your practical men; send your wise and experienced men to meet their fellows—their co-laborers of the plow, the sickle and the cotton bale—to concert measures for the progress, developement and prosperity of our common interest.

Will the gentlemen of the press urge the importance of immediate and prompt action in behalf of this Association?

MOBILE AGRICULTURAL AND HORTICULTURAL SOCIETY.

During our recent visit to Mobile, we enjoyed the pleasure of meeting and conversing with many of the gentlemen of this infant Society, so recently organized in the city of Mobile. We were highly gratified in witnessing the enthusiasm manifested among the officers and gentlemen of the several committees, in regard to the prospective and future action of the Society.

This Society has been organized under peculiarly favorable circumstances, and in the selection of its officers and the arrangements of several committees, especial regard has been had to efficiency, public spirit and energy—qualifications essentially necessary to success in an enterprize of this sort. We know several of the gentlemen, and we are confident they intend to succeed. We hope soon to see and to be able to report the organization of similar Societies in every town, village and county of our State; and we therefore again ask the Secretaries of all Agricultural or Horticultural Societies of our State, to send us a copy of their organization. It will afford us pleasure to publish them.

The following gentlemen are the officers of this Society:

C. C. Langdon, President; Chester Root, Geo. N. Stewart, John C. Hodges, Vice-Presidents; W. W. McGuire, Corresponding Secretary; Samuel Penny, Recording Secretary; A. L. Pope, Treasurer; L. M. Wilson, Calvin Norris, Wm. Stewart, Wm. A. Dawson, J. E. Sawyer, Executive Committee; David Stodder, D. W. R. Davis, F. Ravesies, P. B. Pomeroy, Isaac Donevan, Committee on Agriculture; J. H. Woodcock, Robert Hartwell, I. C. DuBose, Committee on Horticulture; Wm. DeF. Holly, Wm. H. Homer, Wm. Bower, A. B. Gause, C. W. Dorrance, Committee on Floriculture; J. C. Smith, P. Loughry, Edm. Dickson, B. C. Rowan, Wm. Shaw, Committee on Vegetables; Newton St. John, George E. Holt, Robert Purvis, Henry S. Levert, Daniel Wheeler, Committee on Premiums.

MARL AND MARLING.—Too late for our last or February number, we received from Governor Hammond, of South Carolina, a letter prepared by himself, at the request of the Jefferson county (Ga.) Agricultural Society, embodying his extensive knowledge of, and practical experience with marl as a fertilizer, upon thin, sandy, piney woods land, a highly interesting portion of which we furnish our readers in this number. Our friends will derive from this letter some valuable practical hints with regard to the deceptive appearances under which we meet with marl in various localities. It also furnishes a mode and means of analysis, at once plain, simple and sufficiently accurate, by which to enable any planter to determine the value of his marl, or to ascertain whether or not he may have marl. We had intended to furnish our readers with this simple mode of analysis from the *Farmer's Dictionary*. In this connection, however, we esteem the opportunity as decidedly more favorable to the object we have in view. We may remark here, that this essay is the result of more extensive practice in the use of marl than is found perhaps any where in the cotton region of the United States, as Governor Hammond had, at the time this essay was written, spread 300,000 bushels of marl upon 2,300 acres of land; and, using his own language, he says: "I am at this moment as actively engaged at it as ever."

☞ All grain crops should be harvested before the grain is thoroughly ripe.

Plantation Economy.

NO. 4.

DEAR SIR: We may dwell on generalities on the abstract question of what is right and yet accomplish but little in persuading men to do. Allow me to draw on cases in point, and to request of each reader to look among his acquaintance and judge if the facts are not the facts. I will give facts, but use the poet's license in painting up these facts.

Years ago, I met and knew Mr. A. B. He was an industrious, prudent, *economical* man He had a few negroes and a tract of land. He never planted for what is ever understood to be an ordinary crop—his servants and teams never pushed. He always made stables, I think, and took excellent care of his slaves—really exposing himself most. Twenty-five years ago he had probably the same number of negroes—twenty-five. He now pays taxes on considerably over one hundred. Another friend about his own age had, say twenty-five years ago, not under forty negroes. He did for many years make doubly as many bales per hand in all probability, pushing his hands, not by any means brutally—no, indeed; but at this writing he has not over 75, and very many of them bright negroes, or their progeny. Now why the difference?

The first made for a goodly while at least his own shoes, clothing, tools, &c., expending but little for his plantation; raised nearly every negro he owns, seldom loosing his children. I term all born his to be his, whether as black as negroes get to be, or his white family. Thus has his negro women been able to take care of all they had. My other friend, Mr. C. D,, never regarded children as more than costing as much as they were worth to raise them, that he could buy clothing and shoes cheaper than he could make them, that the loss time and feeding a colt ate off its head. And in 25 C. D. confessed to me that our mutual friend could buy him out twice over, taking only their planting interests in the count.

And yet another. My friend R. C. seldom made over 4 bales per hand, really making all supplies save his sugar, coffee, and such like; of course store goods, household wearing apparel are excepted. His cotton did invariably command 3 cents or over it per lb more than others of us who made 50 per cent. more. Four of his bales has netted him $200, whilst four of mine netted me $118. These are outstanding facts in bold relief, and cannot be gainsayed.

Why, sir, I have seen corn and hay taken up to Nashville, Tenn., a region of as fine corn and grass land as our country can boast of. Corn has been brought to this depot to the tune of 30,000 bushels in one year, when I can point out a plantation within 6 miles of it, which every acre will produce an average of 50 bushels per acre. Are these not facts? And why not corret them?

I have understood that cotton goods made not far from Montgomery were sent to New York, there bought by a merchant of Montgomery, shipped past the manufactory and sold in Montgomery. This is only placed here to show that we will look abroad for what we ought to have at home.

Now to eradicate the evil. It is a Herculean task, equal to the cleaning out of the augean stable, but not impossible, Make Agriculture respectable. Instead of my friend R. Z., who is now, we will say, a Senator in Congress, rearing up his son to be a lawyer or a doctor, or some profession, let him show to others that he regards Agriculture equal to any pursuit. Instead of our young man being ashamed of work, let it be his highest meed of praise to have it said he is a working man. Let planters at once direct their own affairs, taking observation of the most minute details, and dispensing with the overseer, using his services as need be, as an agent to carry out his orders. Agricultural papers should hold up a general attention to farming or planting polity, and not to the "earliest bloom," the largest crop, the fattest pig and all such monstrocities. Put down the eternal thirst to outstrip each other in having the first bale carried to market, or the largest per hand crop. Let us see who can show the least mortality, and the greatest increase in servants. Give us the depth of plowing—show us how to make the largest yield per acre the whole farm over. Advise us as to the cheapest and surest mode of raising and feeding horses, mules, hogs, &c.; who can sell five bales of cotton classing high, with stock sold, meat to spare, corn and oats, and sheep and wool for home use. Give us the amount invested in manufactures; who saves and hauls out the greatest number of chords or bushels of manure.

This sort of statistics will soon stimulate man to quite a different policy. I would rather leave my land so improved that my heir could make 50 to 75 bushels per acre, than to leave him the corn and the land reduced to the money scale. Why should not the best policy be, in bringing up land to fatness, and thereby with ordinary industry to have a handsome living, than to have property wasting away to keep soul and body together? We do see there is land, which, twenty years ago, with hard work, did produce only ten bushels of corn, yet now, with comparatively light work, it produces four or five fold. If the land was worth $10 00, then why not place a corresponding estimate on the advance? Land is not valued as it should be. Every man should value his soil as a part of his country, and whilst he would defend the latter with his blood, he should not see the other treated as an enemy to be worried to death—murdered. When the soil is appreciated as it should be, when feeding and resting it becomes a principle, then will we see more improvement than we can now credit.

Yours, &c.,

Edwards, Miss., June 1852. M. W. PHILLIPS.

On the Cultivation of the Ground Nut or Pindar, Pea Nut, Goober—The Arachis Hypogea of Linnæus.

The Ground Nut bears best on a free light soil. Plow and harrow level about the 1st of March; open a trench with a small plow, five feet apart, in strong land, and four feet in poor—about six inches deep; into which put some well rotted manure, if you have it to spare; if not the trench need not be more than three inches deep; cover the manure with about two inches of earth, on which plant the shelled nuts, eighteen inches apart, two in a place, and cover with the foot or hoe. When well up, hoe the grass from the plants for three or four inches on each side of the rows; and keep the spaces between free from grass with the plow and hoe, gradually increasing the width of the beds as the branches spread, and keeping the earth loose for the nuts to enter and grow to maturity. The beds ought to be of an oval form, and not raised very high. The branches spread on the ground, and the blossom is produced at the base of the leaf on a short foot stalk. When the blossom decays, the tender germ, by the elongation of its foot-stalks, pushes itself under ground, where the nut grows to maturity; hence the necessity of keeping the sides of the beds loose to facilitate the entrance of the young and tender nuts. At the last plowing run a furrow from four to six inches deep, to carry off the rain-water from between the beds.

The advantage of putting the manure in the drill where the roots can come in contact with it, is to give a strong and quick growth to the vines, so as to get the whole land covered as soon as possible. The Ground Nut requires the whole season to come to maturity. To save the vines for fodder, before frost pull them up quickly, and dry them until cured. They make excellent hay for all kinds of stock, and the product is more than double the quantity of corn blades. By pulling briskly the nuts are left in the ground to be gathered at leisure. The gathering of the nuts is a tedious process, one bushel being a day's work, unless they bear very thickly, and the weather is fine and the soil dry, when one and a half bushels may be gathered. They are cured by spreading them thin on a scaffold in the sun until perfectly dry, and all the false ones picked out before they are put away.

If not planted to sell, one or more acres should be planted on every farm or plantation, and after gathering enough for family use, and seed for another year, the rest may be left for hogs and turkeys, both of which will fatten on them better than on any other food. And planters on light land may raise their own bacon, of a very fine quality; the hogs may be killed from the Ground Nut field, without any corn, and the meat will be sweeter, and will not shrink more than if corn fed.

The Ground Nut is the best of all nuts grown in the South, and from its productiveness and easy cultivation, ought to be more generally cultivated. The product is more to the acre, producing from fifty to one hundred bushels, and selling readily for one dollar a bushel, and frequently for more.

JOHN MILNE.

Beaufort, South Carolina, Feb. 14th, 1858.

From the Soil of the South.

MANURING CORN.

Mr. Editor: In the March number of the *Soil of the South* are remarks in relation to "Corn Planting." No subject can our agricultural journals treat on of more importance to those engaged in South Western planting, than that of Corn Planting; for, unfortunately, by far too much neglect is manifested among cotton planters to provision crops, and bountifully supplying themselves at home out of their own fields, instead of, as is the custom, depending on Tennessee and New Orleans for what can be made by ourselves, would we but turn a proper attention to this part of our duty. We have no excuse for not making an ample supply of corn, and other grains, and raising our pork—for all who pay a proper attention to this duty, raise plentifully and have it to spare—hence it is manifest that our wants and small crops of corn are owing entirely to negligence and a mistaken policy of farming. I need not say more on our omissions and bad management, as it is constantly adverted to by the editors as well as writers for the agricultural journals; the subject is pressed home sufficiently to produce a change, could sound reasoning and writing have any effect.

I consider myself a fortunate corn planter, as I invariably make large crops, and have it to spare to those who buy corn. I take more pleasure in the planting and cultivation of corn than any other crop I make; hence I find it an easy matter to make large crops—for the *will to do so* is the greatest point at last, and when you obtain your own consent, the greatest difficulty has been overcome. The writer on "Corn Planting" in the March number sets forth some reasoning and practical ideas, in admonishing the farmers to duty. His plan of preparing, planting and management seems good, and his warning, as regards "too much haste and too little care," may be considered all important. I differ though with the writer, as regards his system of manuring with cotton seed.

In planting my corn crops I invariably pay

great attention to the preparation of the ground by thorough, deep plowings. My rows are laid off five feet apart, and the seed placed in the drill as near three feet apart as the droppers can judge. I cover by running a scooter furrow on each side of the planting furrow, and fill up the covering furrows made by the scooter, with two more scooters sideing, breaking out the balk with ahovels. By this method your corn is well covered, and sufficiently deep to protect it from being gravelled up by the birds and squirrels, (I have always had good stands,) and you have the ground deeply broken and well pulverized, for at least eight or nine inches on each side of the corn—in fact, the whole bed, if you are careful in having the balk well plowed out. I scarcely ever give corn more than two plowings, for I have found it unnecessary when the ground has been thoroughly plowed and prepared before planting. I am though as particular in having it as well hoed as plowed, and give it three hoeings, if I conceive that the corn requires a little stirring of the ground.

I have, in as short a manner as possible, stated my plan of preparing, planting and the number of workings I consider necessary. I shall now give you the manner in which I manure with cotton seed.

The ground being well broken up, the laying off furrow is deep and wide; the corn is dropped as above stated in said furrow, as near three feet apart as can be done by judgement. The manurers follow the droppers, and place a large handful of cotton seed in the *planting furrow*, from six to eight inches on each side of the corn; when planted and before covered, it has the appearance, in the furrow, of two handfuls of cotton seed—then the grain of corn to itself, and then the cotton seed and the corn again—it is all covered, as above described, by the scooter. My reasons for thus manuring, I will now give, in as few words as possible, and whether the theory holds good or not, experience and heavy crops bear me out in saying the plan is a good one. The impressions of those who taught me this system, (and they are also my own,) were, that when the manure was placed on the seed corn, or in contact with it, that it pushed off the young plant to a large stalk and heavy blades. But the ear was generally small, for the reason that the benefits of the manure were exhausted in the stalk and blade, and before the ear was formed and needed support. By placing the manure off from the seed, as above described, the young plant extracts nothing from it, and when large, and preparing to ear, its roots were then sapping from the manure the strength which supported the fruit and made a large ear. Such is my plan of manuring, Mr. Editor, as remarked above, whether the theory holds good or not, my crops are large and heavy, planted and managed on this system.

Yours, &c., J. H. D.

March 12, 1852.

From the Southern Agriculturist.

"MANURE IS WEALTH."

Investigation of some of the Causes that have led to the Decline of the Soils of the South.

The Southern States are now annually sending to a foreign market three million bales of cotton. This, rated at four hundred pounds to the bale, will give twelve hundred millions of pounds annually carried off from their soil and shipped across an ocean to a bourne whence no portion of it ever travels back to become an agent of reproduction. These twelve hundred millions of pounds are twelve hundred millions of something essential to the fertility of our soil, which is, in this same degree, diminished in productiveness by their exportation to foreign countries. If the vessels on which our cotton is freighted to the old world, brought back every year fertilizing substances which would replace the elements carried off, we should then consider the account balanced.

The propositions above stated are certainly sufficient to awaken the energies and arouse the attention of every planter to the necessity of an enlightened system of manuring, as the only remedy of the disadvantages under which we labor; and here we must make a distinction which no one seems yet to have enforced, between an agricultural district which mainly exports its productions, and one which mainly consumes its products at home. In the latter case it is evident that all the elements of the soil removed by each annual crop remain at home, and may, if the cultivator chooses, be replaced upon the identical fields whence they were removed.

Now let us see what elements and in what quantity, these twelve hundred millions pounds

of cotton take from us. According to Professor Shepard's analysis, for every hundred pounds of the ash of cotton wool there is abstracted from the soil about sixty-five pounds of the following important mineral ingredients, viz:

Potassa, (with possible traces of soda,)	31 09
Lime,	17 05
Magnesia,	3 26
Phosphoric Acid,	12 30
Sulphuric Acid,	1 22
	64 92

But one hundred pounds of cotton wool are ascertained to contain 92.47 pounds of inorganic matter. Hence there is annually transported by the entire crop of the South eleven millions ninety-six thousand and four hundred pounds of the essential constituents of our soil. In this amount of inorganic material are abstracted one thousand one hundred and sixteen tons of potash; six hundred and twelve tons of lime; one hundred and seventeen tons of magnesia; four hundred and forty-two tons of phosphoric acid, and forty-three tons of sulphuric acid. Let it be kept in view that the above are computations of only a *portion of the mineral ingredients*, (the organic matter not having been taken into the account at all,) and that, too, for only a single crop. To what an enormous aggregate of diminished productiveness may we not reach in fifty, twenty, or even ten years, if we continue our hitherto improvident and skinning processes of culture?

We have omitted above to notice the analysis of the cotton stalk, as well as that of the cotton seed, since, in their annual restoration to the soil, there would seem to be involved no loss. We shall presently show, however, that in connection with the seed, there is an ultimate loss so enormous, so disastrous, that those already cited sink into comparative insignificance; a loss, too, which is the result of improvidence and neglect. But to proceed.

There subsists a striking analogy in the composition of cotton seed and Indian corn, showing theoretically what we all know practically, viz: the special adaptation of the former as a manure for the latter. Corn has been shown, by frequent analysis, to require, for the organization of its seed, a larger supply of phosphoric acid and potash than of any other of its constituents. Cotton seed contain these elements in such proportion as renders them more nearly a specific manure for corn than any other substance we can apply, not excepting even Guano. And here we will offer our theory with respect to the enormous and disastrous loss above referred to, involving the decline of all our lands that have been long cropped in corn or cotton. Such lands lack phosphate of lime; and we will show how they have been ruthlessly deprived of it, and whither it has gone. The ash of cotton seed contains 61 per cent of phosphate of lime, derived entirely from the soil; we return the whole of this as manure to our corn and grain crops; so far as it is all saved and taken up by their processes of growth and maturity. These crops become the main food of man and animals, and their value as a food is in a great degree due to the phosphate of lime which they contain. This substance is secreted by the digestive functions of the animal economy, carried into the circulation of the bones and there deposited, imparting to their structure such firmness and strength as no other quality of food can give. This important element constitutes 55 per cent of the bones of all land animals. It enters largely, also, into the composition of milk—is found in the blood—in the cellular tissue of the lungs, and is constantly required by these organs for the reparation of its waste throughout the whole period of animal life. *Now comes the loss.* The bones are never saved—never restored to the fields which originally yielded their substance to the seed of the cotton crop. On the contrary, whether in town or city, they are thrown aside into some receptacle of useless rubbish. They disappear, too, as if by magic, from our kitchens and plantation quarters; and if, perchance, an animal dies, the scavengers of the air are permitted to make their filthy repast, without a thought or even a consciousness, on the part of the cultivator, of the loss he is incurring.

Who shall estimate the amount of phosphate of lime lost to the soil by the bones of all our horses and mules that die—of all the cattle, sheep and swine that are annually consumed by all classes of Southern population, to as great an extent perhaps as by any people on the globe?

We know of, as yet, not a single establishment in the whole South for the manufacture and sale of *bone dust*. The English agriculturalist, meanwhile, has ransacked the globe for supplies of

this invaluable fertilizer. So far back as the year 1837, the value of the bones annually imported into England from foreign countries, amounted to one and a quarter millions of dollars; and at the present period, possibly exceeds five times that sum.

Thus it will be seen that, by the exportation of cotton wool, the loss of lime and phosphoric acid together, is equal to 29 per cent of its inorganic constituents; while, by our own listlessness and neglect, we incur an almost total (ultimate) loss of 61 per cent of the same elements contained in the ash of the seed. As confirmatory of the force of these views, we will conclude our article by quoting from Liebig's *Organic Chemistry* the following passages:

"My recent researches into the constituent ingredients of our cultivated soils have led me to the conclusion that, of all the elements furnished to plants by the soil and ministering to their nourishment, the *phosphate* of *lime*, or, rather, the phosphates generally, must be regarded the most important. A field in which the phosphate of lime or the alkaline phosphates form no part of the soil, is totally incapable of producing grain, peas or beans. An enormous quantity of these substances, indispensable to the nourishment of plants, is annually withdrawn from the soil and carried into great towns, in the shape of flour, cattle, &c. It is certain that this incessant removal of the phosphates must tend to exhaust the land and diminish its capability of producing grain."

FRANCIS BULKELY.

Gadsden, S. C.

HOW LONG?

DR. N. B. CLOUD:

—*Dear Sir:* Well may I say, Doctor, "How long?" when I look around me at the *progression backwards* among our own people, and then look to New England, and see her progression *forwards*. This thought has been called out by seeing an article ("Progression") in a capital Monthly, published in Boston, by Raynolds & Nourse—*The New England Farmer*. Look—and mark well!

"David D. Stevens, of Lewiston Falls, Maine, gives notice that he will visit any or all the towns within the limits of their Agricultural Society, the ensuing winter, and lecture on the subject of Agriculture." Yes, sir; the people in New England need light at this day; and yet we, "way down South," find no use for it. How long must it be so? How long before our planters will find it advantageous to read, learn and inwardly digest matters pertinent to their profession? If men who have followed a comparatively limited scale of culture need information that a lecturer can be supported by a fair turn out to hear him, how much more so with us, who ought to cultivate and rear nearly all the New England farmer does, and much more in addition? And yet this is scarcely the half; for our servants demand a world of thought, in order that we may do justice to their training, their health aad their work. My dear sir, how long?—how long must it be, before we have thought about the moral culture of all? Yet more—their Christian culture by at least all professors? And yet the treatment required in health to continue them so, and their treatment in disease, to restore them. I do not mean the practice of physic, at all; I only refer to what may be termed a knowledge for the nurse.

Will man never learn until driven to the wall by necessity? Here are we, in this goodly south west, with lands which should produce now, say forty bushels of corn per acre, and should be kept at this point for the residue of our days, "be they many or few." We can make our own supplies, raise our own stock, all the necessaries, and very much of the luxuries of life. And yet, how is it? Our lands are fast verging to the same condition which much of New England, and even many States further South, have long since reached. We have to be forced to the necessity. Like the young woman who was counselled not to marry by her father, who had "seen the error of it," she replied, she wanted to see it too. We will not learn save as Old and New England, New York, Virginia, &c., have learned.

Yours, as I should be,

A FRIEND.

February 17, 1853.

☞ To double the crops on most farms, about all that is necessary is, for our agriculturalists to sell off one half of their land, and with the profits buy manure for the other.—*Southern Cultivator.*

Horticulture.

From the Horticulturist.

HOW TO POPULARIZE THE TASTE FOR PLANTING.

How to popularize that taste for rural beauty, which gives to every beloved home in the county its greatest outward charm, and to the country itself its highest attraction, is a question which must often occur to many of our readers. A traveller never journeys through England without lavishing all the epithets of admiration on the rural beauty of that gardenesque country; and his praises are as justly due to the way-side cottages of the humble laborers, (whose pecuniary condition of life is far below that of our numerous small house-holders,) as to the great palaces and villas. Perhaps the lovliest and most fascinating of the "cottage homes," of which Mrs. Hemans has so touchingly sung, are the clergymen's dwellings in that country; dwellings for the most part of very moderate size, and no greater cost than are common in all the most thriving and populous parts of the Union—but which, owing to the love of horticulture, and the taste for something above the merely useful, which characterises their owners, as a class, are, for the most part, radiant with the bloom and embellishment of the lovliest flowers and shrubs.

The contrast with the comparatively naked and neglected dwellings that are the average rural tenements of our country at large, is very striking. Undoubtedly, this is, in part, owing to the fact that it takes a longer time, as Lord Bacon said a century ago, "to garden finely than to build stately." But the newness of our civilization is not sufficient apology. If so, we should be spared the exhibition of gay carpets, fine mirrors and furniture in the "front parlor," of many a mechanic's, working-man's and farmer's comfortable dwelling, where the "bare and bald" have pretty nearly supreme control in the "front yard."

What we lack perhaps more than all, is not the capacity to perceive and enjoy the beauty of ornamental trees and shrubs—the rural embellishments alike of the cottage and the villa, but we are deficient in the knowledge and the opportunity for knowing how beautiful human habitations are made by a little taste, time and means expended in this way.

Abroad, it is clearly seen, that the taste has descended from the palace of the noble, and the public parks and gardens of the nation, to the hut of the simple peasant; but here, while our institutions have wisely prevented the perpetuation of accumulated estates that would speedily find their expression in all the luxury of rural taste, we have not yet risen to that general diffusion of culture and competence which may one day give to the many what in the old world mainly belongs to the few. In some localities, where that point has in some measure been arrived at already, the result that we anticipate has in a great degree already been attained. And there are probably more pretty rural houses within ten miles of Boston, owned by those who live in them, and have made them, than ever sprung up in so short a space of time in any part of the world. The taste once formed there, it has become contagious, and is diffusing itself among all conditions of men, and gradually elevating and making beautiful, the whole neighborhood of that populous city.

In the country at large, however, even now, there cannot be said to be anything like a general taste for gardening, or for embellishing the houses of the people. We are too much occupied with *making a great deal*, to have reached that point where a man or people thinks it wiser to understand how to enjoy that little well, than to exhaust both mind and body in getting an indefinite *more*. And there are also many who would gladly do something to give sentiment to their houses, but are ignorant both of the materials and the way to set about it. Accordingly, they plant *odorous* Alianthuses and filthy poplars, to the neglect of graceful elms and salubrious maples.

The influence of commercial gardens on the neighborhood where they are situated, is one of the best proofs of the growth of taste—that our people have no obtuseness of faculty as to what is beautiful, but only lack information and example to embellish with the heartiest good will. Take Rochester, New York, for instance—which at the present moment has perhaps the largest and most active nurseries in the Union. We are confident that the aggregate planting of fruits and ornamental trees, within fifty miles of Rochester, during the last ten years, has been twice as much as has taken place in the same

time in any three of the Southern States. Philadelphia has long been famous for her exotic gardens, and now even the little yard plats of the city dwellings are filled with roses, jasmines, Lagestrœmias, and the like. Such facts as these plainly prove to us that, only give our people a knowledge of the beauty of fine trees and plants, and the method of cultivating them; and there is no sluggishness or inaptitude on the subject in the public mind.

In looking about for the readiest method of diffusing a knowledge of beautiful trees and plants, and thereby bettering our homes and our country, several means suggest themselves, which are worthy of attention.

The first of these is, by *what private individuals may do.*

There is scarcely a single private garden in the country which does not posess plants that are perhaps more or less coveted—or would at least be greatly prized by neighbors who do not possess, and perhaps cannot procure them. Many owners of such places, cheerfully give away to their neighbors, any spare plants that they may possess; but the majority decline, for the most part, to give away any plants at all, because the indiscriminate practice subjects them to numerous and troublesome demands upon both the time and generosity of even the most liberally disposed. But every gentleman who employs a gardener, could well afford to allow that gardener to spend a couple of days in a season, in propagating some one or two really valuable trees, shrubs or plants that would be a decided acquisition to the gardens of his neighborhood. One or two specimens of such tree or plant, thus raised in abundance, might be distributed freely during the planting season, or during a given week of the same, to all who would engage to plant and take care of the same in their own grounds; and thus this tree or plant would soon become widely distributed throughout the whole adjacent country. Another season, still another desirable tree or plant might be taken in hand, and when ready for home planting, might be scattered broadcast among those who desire to possess it, and so the labor of love might go on as convenience dictated, till the greater part of the gardens, however small, within a considerable circumference, would contain at least several of the most valuable, useful and ornamental trees and shrubs for the climate.

The second means is, *by what the nurserymen may do.*

We are very well aware that the first thought which will cross the mind of a selfish and narrow-minded nurseryman, (if any such read the foregoing paragraph,) is that such a course of gratuitous distribution of good plants, on the part of private persons, will speedily ruin his business. But he was never more greatly mistaken, as both observation and reason will convince him. Who are the nurseryman's best customers? That class of men who have long owned a garden, whether it be half a rood or many acres, who have never planted trees—or, if any, have but those not worth planting? Not at all. His best customers are those who have formed a taste for trees by planting them, and who, having got a taste for improving, are seldom idle in the matter, and keep pretty regular accounts with the dealers in trees. If you cannot get a person who thinks he has little time or taste for improving his place to buy trees, and he will accept a plant or a fruit tree, or a shade tree, now and then, from a neighbor whom he knows to be "curious in such things"—by all means, we say to the nurseryman, encourage him to plant, at any rate and all rates.

If that man's tree turns out to his satisfaction, he is an *amateur*, one only beginning to pick the shell, to be sure, but an amateur full fledged by and bye. If he once gets a taste for gardening downright—if the flavor of his own *rareripes* touch his palate but once, as something quite different from what he has always, like a contented, ignorant donkey, bought in the market—if his Malmaison rose, radiant with the sentiment of the best French women, and the loveliness of intrinsic bud-beauty once touches his dull eyes, so that the scales of his blindness to the fact that one rose "differs from another," fall off forever—then we say thereafter, he is one of the nurseryman's best customers. Begging is both too slow and too dependent a position for him, and his garden soon fills up by ransacking the nurseryman's catalogues, and it is more likely to be swamped by the myriad of things which he would think very

much alike, (if he had not bought them by different appellations,) than by any empty spaces waiting for the liberality of more enterprising cultivators.

And thus, if the nurseryman can satisfy himself with our reasoning that he ought not object to the amateur's becoming a gratuitous distributor of certain plants, we would persuade him for much the same reason, to follow the example himself. No person can propagate a tree or plant with so little cost and so much ease, as one whose business it is to do so. And we may add, no one is more likely to know the really desirable varieties of trees or plants, than he is. No one so well knows as himself, that the newest things—most zealously sought after at high prices—are by no means those which will give the most permanent satisfaction in a *family garden*. And accordingly, it is almost always the older and well-tried standard trees and plants—those that the nurseryman can best afford to spare—those that he can grow most cheaply—that he would best serve the diffusion of popular taste by distributing gratis. We think it would be best for all parties if the variety were very limited—and we doubt whether the distribution of two valuable, hardy trees or climbers for five years, or till they become so common all over the surroundings as to make a distinct feature of embellishment, would not be more serviceable than disseminating a larger number of species. It may appear to some of our commercial readers, an odd recommendation to urge them to give away precisely that which it is their business to sell—but we are not talking at random, when we say, most confidently, that such a course, steadily pursued by amateurs and nurserymen throughout the country, for ten years, would increase the taste for planting and the demand for trees, five hundred fold.

The third means is, *by what the Horticultural Society may do.*

We believe there are now about forty Horticultural Societies in North America. Hitherto they have contented themselves, year after year, with giving pretty much the same old schedule of premiums for the best cherries, cabbages and carnations, all over the country—till the stimulus begins to wear out—somewhat like the effects of opium or tobacco, on confirmed *habitues*. Let them adopt our scheme of popularizing the taste for horticulture, by giving premiums of certain select small assortments of *standard* fruit trees, ornamental trees, shrubs and vines, (purchased by the society of the nurserymen,) to the cultivators of such small gardens, surburban door-yards, or cottage enclosures, within a distance of ten miles round, as the inspecting committee shall decide to be best worthy, by their air of neatness, order and attention, of such premiums. In this way, the valuable plants will fall into the right hands; the vender of trees and plants will be directly the gainer, and the stimulus given to cottage gardens and the spread of the popular taste, will be immediate and decided.

"Tall oaks from little acorns grow"—is a remarkably trite aphorism, but one, the truth of which no one who knows the aptitude of our people, or our intrinsic love of refinement and elegance, will underrate or gainsay. If, by such simple means as we have here pointed out, our great farm on this side of the Atlantic, with the water privilege of both oceans, could be made to wear a little less the air of Canada-thistle-dom, and show a little more sign of blooming like the rose, we should look upon it as a step so much nearer the millenium. In Saxony, the traveller beholds, with no less surprize than delight, on the road between Wiessenfels and Halle, quantities of the most beautiful and rare shrubs and flowers, growing along the foot-paths, and by the sides of the hedges which line the public promenades. The custom prevails there, among private individuals who have beautiful gardens, of annually planting some of their surplus *material* along these public promenades, for the enjoyment of those who have no gardens. And the custom is met in the same beautiful spirit by the poeople at large; for in the main, those embellishments which turn the highway into pleasure grounds, are respected, and grow and bloom as if within the enclosures.

Does not this argue a civilization among these "down-trodden nations" of Central Europe, that would not be unwelcome in this, our land of equal rights and free schools?

☞ All wet land should be well drained.

PEACHES AT THE SOUTH.

BY WM. N. WHITE, OF ATHENS, GA.

Our remarks upon the Peach will be concluded by a few notes upon the varieties cultivated here, in regard to quality, time of ripening and productiveness. The times of ripening of the Peaches described below are for 1850 and 1851, as the crop the past season was greatly injured by frost. They are described in the order of ripening.

1. *Columbus June.* Brought here from Columbus, Ga., and said to be a native of the State. Leaves, with uniform glands. Flowers—small. Fruit—medium size to large, flattened or slightly hollowed at the apex. Suture—shallow. Skin—pale yellowish white, with a rich red cheek towards the sun. Flesh—slightly red at the stone, melting, juicy, sweet and high flavored. A good bearer and an excellent peach for its season, in every respect. Ripens 20th June. Indispensable.

2. *Early York.* We have a peach from the north, without the name, which I think is this variety. An excellent peach, very juicy, and in every respect worthy of cultivation. June 20th.

3. *Walter's Early.* Bears an abundant crop of melting and delicious fruit, which ripens about the first of July. Not so easily injured by frost as many others. Succeeds as far south as Mobile. Likes a sandy soil.

4. *Red Rareripe.* Ripens about the same. Bears well, and is a great favorite here. Fruit—melting and high-flavored.

5. *Strawberry.* Generally ripens about the 1st of July, and if allowed to overbear is of but ordinary quality. This year a few escaped the frost, and ripened some six days earlier than usual, and were delicious; if well thinned, always so.

6. *Royal George.* This peach is not inclined to overbear, but ripens a moderate crop of delicious peaches about the 4th of July.

7. *Coolidge's Favorite.* The peach received here under this name bears finely, and ripens about the 5th of July, but is too acid and poor to cultivate. We may not have the true variety.

8. *Early Admirable.* Ripens about the 5th of July. Productive, large and good. It will stand a frost without much injury, that will cut off *Grosse Mignonne* entirely. Bore a good crop this season—one of the best.

9. *Early Newington Free.* Another hardy, excellent variety, bearing a fair crop the present season, in spite of the frost. One of the most desirable peaches grown. Ripe July 5th.

10. *Grosse Mignonne.* This is, perhaps, the best free stone peach cultivated. Fruit—large, beautiful and delicious—excellent in every respect. Ripens July 8th. If it has no rival, it is

11. *George IV.* This ripens a day or two later, and is in general equally esteemed with the foregoing for beauty and excellence.

12. *Malta.* Ripe the 10th of July. Large, juicy and good.

13. *Morris' Red Rareripe.* Ripe about the middle of July. Productive, melting and excellent.

14. *White Blossomed Incomparable.* Ripe the 15th or 20th of July. Nearly always wormy, and not worth cultivating. Of only second rate quality.

15. *Crawford's Early.* One of the best cultivated, always large and fair, and pretty hardy. Ripe middle of July. Fruit often nine inches in circumference.

16. *Bellegarde.* This peach came here as the *Red Magdelen.* It is hardy and productive. Will stand frost better than most of the good varieties. The fruit is melting and delicious. One of the best. Ripe about the 20th of July.

17. *Noblesse.* Ripens about the 20th of July—very excellent. Well worth cultivating, even in small collections.

18. *Belle de Beaucaire.* Received by Mr. Camak from Mr. Prince. Leaves—with globose glands. Flowers—small. Fruit—very large, (about the size of *Crawford's Early,*) roundish, with protruding point at top. Suture—is very shallow, but distinctly marked from apex to stem. Skin—light yellowish green, with cheek slightly reddened. Flesh—greenish yellow, and light red at the stone; a little coarse, but delicious; full of a very rich, slightly acidulated juice. Tree—thrifty, bears regularly and sufficiently abundant. Skin slips readily from the flesh without the use of a knife. Ripe the last of July. One of the best.

19. *Late Red Rareripe.* Ripens last of July. Productive and good.

20. *Royal Kensington.* Ripens first August. Somewhat resembles *Grosse Mignonne,* but it is dryer and not so good.

21. *Late Admirable.* Ripens the 1st of August. One of the very best late peaches. Lasts till the middle of August. Still not equal to *Grosse Mignonne.*

22. *Merris White.* Ripens early in August. This peach is very apt to be wormy. I have never seen it first rate, always acid and somewhat astringent.

23. *Crawford's Late.* A magnificent peach—large and productive. Ripens early in August. One of the very best. Indispensable.

24. *Ispahan.* Received under this name, but is not the *Ispahan* of the books, but seems to resemble very much the *Red Cheek Melocoton,* and is perhaps identical. Generally a large and rather fine variety. Ripens about the 10th of August.

25. *President.* One of the indispensable varieties. Ripens about the middle of August.

26. *Green Catherine.* A large and productive peach, but inferior to the foregoing, and apt to be wormy. Ripe August 12th.

27. *Newington Cling.* Ripe about the 10th of August. One of the best of the clings—rich and juicy.

28. *Pace, or Timely.* Ripe middle of August. Fruit—large to very large in size, oval, pointed at apex. Skin—of dull, dark, purplish red, covered with a thick, dull, grey down, Flesh—dark red, marbled with orange, moderately juicy; rich, not too acid for most tastes. It is productive and very hardy. Resists frost better than most peaches. Skin peels off readily when fully ripe. Loses flavor if over ripe. Externally the color is something like *Blood Cling.* A freestone, and a great favorite in most parts of the State, but not first rate. Reproduces itself from the stone.

29. *Red Cheek Melocoton.* Ripe middle of August. A beautiful and productive peach, of fine quality, but not the best. Merits cultivation for its hardiness. Ripens much earlier some years than the time above specified.

30. *Lemon Cling.* In this climate delicious. One of the best of the clings. Ripe 10th August.

31. *Yellow Blanton Cling.* Ripe 20th of August. Leaves—large, with globose glands. Tree—thrifty and healthy. Fruit—large, and in general shaped like the *Lemon Cling,* with the same projecting, swollen point. Skin—rich orange, with a slightly red cheek. Flesh—orange yellow, firm, but full of a delicious vinous juice. Originated here. Later and better quality than *Lemon Cling.* To my taste the best of clings. Reproduces itself from seed.

32. *Pavie de Pompone.* A magnificent looking peach, but the flesh is too coarse to be a favorite.

33. *Blood Cling.* Ripe the 20th of August, but unfit for eating. When very ripe it is barely tolerable. Don't know any reason why it should be cultivated.

34. *Tippecanoe Cling.* Ripens in the latter part of August, and is large, juicy and fine. One of the best.

35. *White English Cling.* Leaves—with globose glands. Fruit—very large and oval. Suture—slight, with a swollen point at top. Skin—clear, creamy white, with sometimes a slight hue of red on the sunny side. Flesh—delicate white, free from red at the stone, to which it firmly adheres; very rich, juicy and high flavored. As it is entirely free from color, it is the very best for preserving or for brandy peaches. Has no tendency to be wormy, as most white peaches have. Ripe early in September. Grows true from the stone. Very valuable for its lateness and excellence. Widely known here. Brought originally from Virginia.

36. *Bough.* This is the next named peach of first quality that ripens after the *White English*—a native of this State. Leaves—with globose glands. Fruit—medium size, roundish, terminated with a small point. Suture, obscure. Skin—pale yellow, almost white, with a slight blush towards the sun. Flesh—yellowish white, melting and juicy, with a sweet, pleasant flavor. By far the best fruit of the season. Indispensable. Freestone. Ripe 1st October.

We have three peaches, of pretty good quality, without names, two of which were received from Mr. Prince, by Mr. Camak, with the statement that they were too late to be valuable in that climate, and the other obtained by Mr. Camak from

an old field in this State, all of which are really valuable, as they ripen between the 15th of September and the 15th of October. We have also a *Cling* of very good quality in warm seasons, that ripens the 1st of November; making it possible to extend our peach season from the 20th of June till about the middle of November, in favor able years.

Of the above peaches, the best ten for succession, in this climate, are *Columbus June, Walter's Early, Grosse Mignonne, Crawford's Early, Belle de Beaucaire, Crawford's Late, Newington Cling, Yellow Blanton Cling, White English* and *Bough*. Add to these the *Early York, Early Admirable, George IV., Bellegarde, Late Admirable, Late Rareripe, President, Lemon Cling, Tippecanoe, November Cling*, and the unnumbered varieties above for October, and the collection is quite as large as desirable.

Miscellaneous.

From the Southern Agriculturist.

HEDGES FOR RAILROADS, &c.

The protecting of lines of Railroads, so as to prevent the incursions of stock, would certainly be desired by all persons who wish to throw more effectual guards of security around human life, as well as by those who would exempt their domestic animals from those contingencies of danger, and the casualties which so frequently occur. Cattle are accustomed to select roads and clean places to sleep on, and hence this kind of stock are more frequently killed than horses, swine and sheep. The location of most of our roads in the upper country—seeking the vallies, in order the more easily to reach their most elevated grades—has invaded those grounds naturally fitted for pasturage; and hence, the evil here will become greater rather than decrease. It is the duty, and should be made penally the business of Railroad Companies, to fence in their lines of roads at all exposed points, so that human life and private property would not be perilled by the heedlessness of engine-drivers. We once had the pleasure of introducing into the South Carolina Legislature, a bill, embracing, among other things, provisions relating to this matter. That portion of it relating to placing obstructions on tracks, &c., was enacted into a law, making such crimes highly penal; but the portion which proposed erecting securities to the land-holder, was thrown overboard, *sans ceremonie*—very much like they frequently serve their passengers. The private rights of the land-holder are invaded by the building of the road, and if he concedes them the privilege of a right of way, they are certainly the more bound to protect his personal property which may be endangered by their operations. "A public blessing" should not be permitted to degenerate into a general nuisance. The inexpediency of the thing, because it would cost money to do it, shall not prevent us from repeating our views until every line of Railroad in the country is made secure from the incursions of stock. The land-holder should be protected by laws embodying the most ample, as well as the most stringent provisions. In England, guards are stationed at regular distances, in order to ensure safety, and road-crossing are secured by gates on each side of the Railroads, which are closed whenever a train approaches. On many of our roads there is not, even at road-crossings, a sign—"Look out for the ears when the engine whistles!"—to warn travellers.

Hedges, as far as private property is concerned, would afford ample protection. The Osage Orange (*maclura aurantica*) would form an impenetrable barrier, at such points where the road is at or near grade. For large banks, the Macartney Rose would soon cover their side and prevent them from washing. This rose is a rapid grower, and is covered with innumerable thorns, so that but few animals would venture amongst them. The track minders could keep the weeds and grass from obstructtng the growth of these plants for a few years; and the trimmings of these hedges would not amount to as much in ten years as it would require to keep the bushes and briars cut down. The soil of Railroad banks produces most luxuriant growth. One plant of the Osage Orange every two feet, and one of the Macartney Roses to every ten feet of bank, would, in time, prove ample protection against stock. What Railroad Company will set the good example, and make a trial? What says the little Laurens? What the scourged and unfortunate Greenville? And what our friends of the Spartanburg, whose chief engineer has so much taste

for rural adornment, and who, to our knowledge, is the only individual that has devoted any attention to beautifying and preserving public works by the aid of those natural resources which abound on all hands? We refer to his having planted a skirting of beautiful Hawaian Canes on a bank near Pomaria, whilst he was in the service of the Greenville Railroad Company.

From the Horticulturist.

WHEN TO PRUNE.

A correspondent has furnished us with the following text: "At what times in the year should the different kinds of pruning be performed, in the cold latitudes of the North, and in the milder climates of the South?"

We hold that pruning in general, in our northern climates, is safest after the severe frosts of winter are over, immediately before the swelling of the buds. When performed early in the winter, or in autumn, as is practised properly in mild climates, the ends of the cut shoots dry up, shrivel and die—loosing the buds intended to make leading shoots, and leaving dead points that require much labor to prune off afterwards; or if large branches are cut off, leaving a broad, fresh surface, the wood and bark dry up and require a long time to heal. We perform most of our pruning in the month of March, although a great deal of the less exact nursery pruning is done in February. Southward, as the climate is mild and spring early, we should prefer pruning very early in the winter, or immediately after the fall of the leaf, because activity in the functions of the tree commences early, or scarcely ceases, as we must believe it does during our intensely cold weather, and by pruning early we economize the sap and strength of the tree.

The only pruning we hold to be sound, safe and commendable, in the season when the leaves are on the trees, is that of the *finger and thumb*, in other words, *pinching*. It is quite inconsistent with good management to rear a crop of shoots and then cut them away. This can only be avoided by nipping superfluous or misplaced shoots at two or three inches of growth, before they attain to woodiness. This economizes the force of the tree, and turns it into a channel where it will promote, instead of frustrating the ends we are aiming at. For instance, if we plant a young tree, and have pruned it with a view to a certain form, and, contrary to our expectations, a shoot breaks out at an unexpected point, and assumes a vigorous habit, and robs all the other parts, it would evidently be unwise to tolerate this intruder until it arrives at full growth, and then cut away. Too many trees are thus managed, by the neglect of summer pruning or pinching. We admit, however, that there are cases in which the summer pruning, or entire lopping off or cutting out branches of considerable size, may be judicious and safe. For instance, in the case of neglected orchard trees, in a luxuriant state, with dense heads in which the fruit is deprived of air and light. In such cases, branches may be thinned out, and the cut surface heals over more rapidly and smoothly than at any other time. But it is unsafe to produce any very sensible diminution of foliage, as it arrests the growth of the tree.

All pruning in the growing season tends to arrest growth. Nurserymen know that a slight pruning of stocks before budding will so arrest growth as to make the bark adhere firmly, when, before the pruning, it lifted freely. It is on this principle that most all pruning, to promote fruitfulness, must be done at a point of greater or less activity of growth. Late spring pruning is often resorted to as a means of subduing a superabundant vigor, and it has the same effect as root pruning to a certain extent.

Review of the Cotton Market.

MOBILE, MARCH 2, 1853.

Dr. N. B. Cloud, Dear Sir: In reply to your request, that I should furnish you my views respecting the prospects of the price of our great staple, Cotton, I beg to say that the pressure of my engagements restrains me from entering fully now into the details of the subject. It, however, affords me much pleasure to enclose you my Circular of the 1st of January last, which, if you deem of sufficient interest, you may publish or extract from. It examines the subject at length, though I will not say exhausts it.

My opinions then submitted are not materially changed. I estimated the crop at 2,750,000 bales; though I admitted it was possible it might reach 3,000,000. The excess of receipts this year over the corresponding periods of last, look now, and have looked for some time, formidable.

Take a little boy, ever so smart, but who has never been accustomed to spirited and high-bred horses, and put him on the back of one, and the usual pawing and

bowing of the neck, &c., will alarm him so much as to absolutely frighten the animal; while, take one who has been amongst the animals much and rode races, and put him up, and he is wide awake to those movements. So it is now with those who are in the habit of cultivating rumors; when they look at this excess—the why and the wherefore of the excess—they are too numerous to investigate, and simply would add to the excess the amount received after that period the year before, with the proportionate increase for that subsequent time. They would rise from their wise figuring, saying that was a safe calculation, and they would only operate on that basis—they would not only buy by it, but they would be willing to sell by it. I think both these extremes unfortunate for the parties. The circumstances of the excess should be considered. In the circular alluded to, I have pretty well explained the causes of this excess, without admitting that it will or can be long maintained; and I will simply recapitulate the heads here. They are these, with our acknowledged full crop, and *Middlings*, at the beginning of the season at 9¼ to 9½ cents, and with the most universal capacity to ship cotton to market from the time it was picked out early in the fall, it has been hurried to market as fast as it has been possible to do it. So we are now near the *close* of our receipts everywhere, in my opinion. Last year the receipts were kept back from very many important sections, from lowness of the rivers, until February, and of course receipts were considerably retarded last year.

Last week we received here 80,000 bales; this week our receipts will be about 20,000; next 10,000; next 7,000; next 5,000; and after that they will be next to nothing. At New Orleans, their receipts for this and the succeeding three weeks, will fall below 25,000 bales a week, and after that, the story will be told there. And so of each division of the cotton region—by the first day of April the cotton will be pretty much all in. Beginning to arrive four months *earlier* than last year, receipts will certainly be in *four months earlier*.

My figures now for the crop would range something thus:

New Orleans	1,450,000	to	1,500,000
Mobile	490,000	to	510,000
Texas	65,000	to	70,000
Atlantic Ports	700,000	to	750,000
Florida	165,000	to	170,000
Total	2,865,000		3,000,000

Should the receipts run up to 3,000,000, the crop has been then at least 250,000 bales heavier than last year. I have doubted, taking all things into consideration, if it were really heavier. Last year at least 250,000 bales of old cotton came to hand, which, dispersed throughout the cotton region, is held for other years. This crop will lose that sort of aid. It will all come forward, I believe, as I do not know of any feeling in favor of holding cotton back in the country anywhere.

Well, with all the favorable concurring elements, if it is found the crop will not exceed 3,000,000, Middling Cotton, I think, will go to 7d. before the 1st of July in Liverpool; and if the *worms*, which made a pretty respectable commencement last year, should acquit themselves with their usual taste and impartiality, (and they are fully due this year, as it is the seventh since 1846,) why, prices will go to 8 or 9d. for Middlings next fall.

Middlings which we sold this time last year for 6¾c., we are now selling at 8½c., and such was selling at the same time in Liverpool at 4½d., and was, at last dates, selling at 5⅛d. this year—a difference here of 1¾c. higher, while these prices are equal to 2¾c. higher. The pressure of our receipts, and our anxiety to sell, puts us *lower* than we should be evidently, if these receipts could have been diffuse throughout the year.

I think, therefore, the prospects of the cotton planter are extraordinarily propitious; that cotton must advance this season further, and prices will also be good another year.

How much good depends, as usual, on accidents! If the worm does his seventh year's work, 15c. next year will be a common price.

Truly your friend,
GEO. G. HENRY.

Contents of this Number.

The Cotton Trade....65
Enormous Tax upon Farmers....70
Analyses of the Cotton Plant and Seed....70
History of Cotton Manufactures....73
Marl and Marling....76
The Result of Manure on a Pear Tree....79
To Dress Salt Fish....79
The Cow and the Dairy....79
Agricultural Convention....80
Cotton Manufactures in Russia....81
Editorial Notices, &c....81
Mobile Agricultural and Horticultural Society....82
Notice of Marl and Marling....82

PLANTATION ECONOMY.

Number 4....83
Cultivation of the Ground Nut....84
Manuring Corn....84
Manure is Wealth....85
How Long?....87

HORTICULTURE.

How to Popularize the Taste for Planting....88
Peaches at the South....91

MISCELLANEOUS.

Hedges for Railroads....93
When to Prune....94
Review of the Cotton Market....94

GEORGE G. HENRY,
COMMISSION MERCHANT,
MOBILE, ALABAMA.
Mobile, September 1st, 1852.

H. L. REYNOLDS,

IMPORTER AND DEALER IN

Bar Iron, Nails, Castings, &c.,

AGRICULTURAL IMPLEMENTS,

Hardware, Cutlery, Guns, &c.

62 & 64 Water Street,

MOBILE.

March 1st, 1853.

Alabama Chair Factory.



THE subscriber, who is sole Proprietor of the above Manufactory, having obtained and put in operation the requisite machinery, and secured the services of skillful workmen, respectfully announces to the public that he is fully prepared to execute all orders with which he may be favored, and upon the most favorable terms,

☞The FACTORY is conveniently located on the road leading from Montgomery to Tuskegee, twenty-five miles from the former place, and seventeen from the latter. It is but a mile and a half south-east from SHORTER'S DEPOT, on the Montgomery and West Point Railroad, and FURNITURE, if so desired, will be delivered at the Railroad without extra charge.

W. J. HOWARD.

Cross Keys, Macon Co., Sept. 1-6t

WILLIAM WRIGHT,

Surgeon's Machinist, Truss Maker, Cutler, &c.,

PERRY STREET, OPPOSITE THE RIALTO,

MONTGOMERY, ALA.,

MAKES and adapts every description of Truss for Inquinal, Cural, and Umbilical Hernia;

Spinal Supports for Curviture of the Spine;

Instruments for Incurvation of the Limbs of Children, club feet, distortions, &c. &.;

Artificial Limbs; Laced Stockings; Ankle Socks; Knee Caps for varicose veins, weak and swelled legs, knees, &c. &c.

P. S. Particular attention paid to Plantation Stands, and Instructions for Measuring sent by post to any part of the country.

ALSO, ON HAND ALWAYS,

A Splendid Assortment of *SHEFFIELD CUTLERY*, of the finest quality, finish and temper, imported direct from the makers, consisting of

Ivory-Handled Table Knives, for Silver Plated and Steel Forks;

Pen, Pocket, Hunting, and Sportsmen's Knives;

Razors, warranted; Strops, &c. &c.;

Ladies' Scissors, and a variety of other articles of Cutlery.

☞New Blades put in Handles. Cutlery and Surgeons' Instruments repaired.

February 1st, 1853.

THE SOUTHERN CULTIVATOR, is published on the first of each month, at Augusta, Geo. D. LEE, M. D., Editor, and D. REDMOND, Assistant Editor. *Terms:* $1 a year, in advance.

Acclimated Fruit Trees,

ORNAMENTAL TREES & SHRUBS, GRAPE VINES, STRAWBERRY PLANTS, &c., &c.,

CAN NOW BE HAD, OF SOUTHERN GROWTH, AT THE

SOUTHERN NURSERIES, WASHINGTON, MISS.

THE Stock, this year, is good and well-grown. Prices and descriptive Catalogues, containing hints for planting, pruning and tending, will be promptly forwarded by mail to applicants who prepay their letters. Shipments can be made, with entire safety, to any part of the South—the utmost attention being paid to *packing* and *forwarding*.

THE SOUTHERN RURAL ALMANAC, FOR 1853,

Has been published, as usual, and will be sent by mail and prepaid, on receipt of 12 cents in postage stamps.—Orders solicited, for this useful and popular periodical, from Booksellers and Country Merchants; and advertisements from Gind-Stand and other Manufacturers, Schools and Colleges, Watering Places, &c. No other work has so large a circulation in the South.

AFFLECK'S COTTON PLANTATION RECORD AND ACCOUNT BOOKS, new edition, now ready. No. 1, for 40 hands or less, $2 50...No. 2, for 80 hands or less, $3 00...No. 3, for 120 or less, $3 50.

AEFLECK'S SUGAR PLANTATION RECORD AND ACCOUNT BOOKS—Number 1, for 80 hands or less, $3 00...Number 2, for 120 hands or less, $3 50.

☞These Books are now in general use amougst Planters. They will be sent by mail, prepaid and carefully enveloped, at the above prices. Orders solicited from Booksellers and other dealers, to whom a liberal discount will be made.

GENUINE UNADULTERATED

PERUVIAN GUANO.

THE Subscriber, acting under an arrangement with Messrs. F. Barreda & Brother, of Lima and Baltimore, the general agents of the Peruvian Government for the sale of Guano, and through whom alone this Guano can be procured, is prepared to supply Planters and others in the South, with a pure and unadulterated article, in any desired quantities, and at the following prices, delivered in New Orleans:

For any quantity under four tons, $50 per ton of 2000 lbs.

For more than four tons and under 25, $47 per do.

For larger quantities, the price is somewhat lower.

In all cases, where more than one ton is ordered, there will be no additional charges for drayage, &c., but the Guano will be delivered on board steamer, or in the city, at these prices. For less than one ton, drayage will be added.

By this arrangement, the cost to the Planter will be THE LOWEST at which GENUINE PERUVIAN GUANO can be purchased; avoiding the factor's commission for purchasing, drayage, repairs of sacks, &c., &c.; and the subscriber guarantees the article, procured through orders sent to him, to be unadulterated and pure as taken from the Chincha Islands. It will be delivered in sacks, containing each about 150 to 180 lbs.

A sight draft upon a New Orleans house, or other equally available funds, must invariably accompany each order.

As the first cargo, coming direct from Peru to New Orleans, under the subscriber's arrangement with the Messrs. Barreda, cannot be expected to arrive before the 1st of October next, a supply will be immediately sent forward, reshipped at Baltimore and stored at New Orleans, to afford him the means of filling orders already received, or which may be sent to him during the winter. The price, for any quantity of this lot, over one ton, will be $50 per legal ton, delivered on board steamer; the freight and charges from Baltimore causing the additional price when even a larger quantity than five tons is ordered.

Messrs. Barreda, in their letter to the subscriber, laying down the scale of prices, and explaining the arrangements entered into for a deposit in New Orleans, remark,—"We have given orders to our Lima house to send direct from the Chincha Islands, a quantity sufficient to meet the demand, and to have a deposit always ready to supply any amount. The Guano that you will receive shall come direct from the said Islands."

From arrangements made with some of the regular Packet Boats on the river, the freight will not exceed, to any point below Vicksburg, from 20c. to 25c. per sack, or about $2.50 to $3.50 per ton.

THOMAS AFFLECK,

1st January, 1853-4t. Washington, Adams co., Miss.



A Monthly Journal, devoted to improved Plantation Economy, Manufactures, and Mechanic Arts.

Vol. I. MONTGOMERY, APRIL, 1853. No. 4.

From DeBow's Review.

THE HISTORY OF COTTON MANUFACTURES.

(*Continued.*)

Previous to 1790, the United States did not export a single pound of raw cotton. In 1792, we exported the trifling quantity of 138,328 pounds. Whitney's invention came into operation in 1793, and in 1794 we exported 1,601,760 lbs; and in 1795, 5,276,306 lbs. And so astonishing has been the growth of cotton since the invention of the cotton gin, and occasioned by it, that in 1838 the United States exported 595,952,297 lbs. Our immense exports since that year need not be given.

A cotton mill is probably, all things considered, the most astonishing triumph of skill and ingenuity; all the various operations, from the carding of the cotton to its conversion into a texture as fine almost as that of the gossamer, being performed by machinery. Each of the workmen at present employed in a cotton mill, superintends as much work as could have been executed by two or three hundred workmen sixty or seventy years ago; and yet, instead of the number of workmen being diminished by machinery, it has been vastly increased. It would be curious to investigate how many persons are dependent directly for subsistence on the inventions and discoveries of Hargreaves, Arkwright, Watt, Whitney, and other founders and improvers of this great manufacture. They certainly amount to several millions; at the same time that there is hardly an individual on the face of the globe who is not indebted to them for an increase of comfort and enjoyment. It is impossible to estimate the advantage to the great bulk of mankind arising from the wonderful cheapness of cotton goods. The humblest classes have now the means of dressing as elegantly as did the highest fifty years ago; and the humblest peasant's cottage may now have as handsome furniture for beds, windows, tables, &c., as the house of the rich man half a century ago.

The following table will show the early progress of the cotton manufacture in Great Britain prior to the invention of the spinning-jenny by Hargreaves:

Years.	Raw Cotton. Imported.	Value of Goods. Exported.
1697	1,976,359 lbs	£5,915
1701	1,985,868	29,253
1710	715,008	5,398
1720	1,972,805	16,200
1730	1,545,472	18,594
1741	1,645,031	20,760
1751	2,976,610	45,986
1764	3,870,392	200,354

The spinning-jenny of Hargreaves went into operation in 1767; and Arkwright's improvement was patented and put in operation in 1769. The

influence of these and other inventions and improvements made afterwards, on the manufacture and trade, may be seen by inspecting the following table:

Years.	Cotton Imported.	Cotton Exported.
1781	5,198,773 lbs.	96,788 lbs.
1785	18,400,384	407,496
1790	31,447,605	844,154
1795	26,401,340	1,193.737
1800	56,010,732	4,416,610
1805	59,682,406	804,243
1810	132,488,935	8,787,109
1811	91,576,535	1,266,867
1812	63,025,936	1,440,912
1813	50,966,000	———
1814	60,060,239	6,282,437
1815	99,306,343	6,780,392

The importations of cotton into England, from all sources since 1816, have been as follows, according to the statement of Messrs. Geo. Holt & Co., cotton brokers at Liverpool:

1816	93,000,000 lbs.	1838	501,000,000 lbs.
1820	143,000,000	1839	388,000,000
1825	222,000,000	1840	583,000,000
1830	261,000,000	1845	721,979,953
1835	361,000,000	1850-1	800,000,000
1837	408,000,000		

The best portion of the cotton imported into England comes from the United States; the balance from Brazil, Turkey, Egypt, and the British East and West India possessions. England takes the lead of all other nations in manufactures, particularly of cotton. It is estimated that the number of persons employed in this manufacture in Great Britain is not far from 2,000,000. Estimating the state of the cotton manufacture by the number of spindles employed, it stands nearly as follows at the present time, in the various manufacturing countries of the world:

Great Britain	17,500,000 spindles.
France	4,300,000
United States	2,500,000
Germany	815,000
Russia	700,000
Switzerland	650,000
Belgium	420,000
Spain	300,000
Italy	300,000

Manchester, or rather Lancashire, is the grand seat of English cotton manufacture; and next to it Cheshire, Nottinghamshire, the West Riding of Yorkshire and Cumberland, are its principal seats. Glasgow and its vicinity is the seat of the manufacture in Scotland, and Belfast in Ireland, where it is said to be on the decline.

The value of the cotton manufacture of Great Britain is greater, estimating from the last table of spindles above, than that of all the rest of the world besides. It is difficult to give an accurate estimate of the annual total value of the cotton manufacture of Great Britain. Mr. McCulloch, in his *Commercial Dictionary*, estimates it at about £34,000,000, or $164,560,000. This estimate is considered by Mr. Baines, in his elaborate work on the Cotton Manufacture, as too small.

It would be a pleasant task to trace the history of cotton manufactures in France, Germany, Holland, Russia, and other countries of Europe; but as that would extend this paper much beyond the limits we designed for it, we shall conclude with a brief history of the manufacture of cotton in the United States.

The first cotton-mill of the United States was erected in Pawtucket, Rhode Island, by the late Mr. Samuel Slater, a native of Belper, Derbyshire, England, in 1790. The machinery was that of the Arkwright patent. There is evidence that Hargreave's jennies were in use in this country previous to 1790, but by whom and when introduced, is not known. They were worked principally by Scotch and Irish weavers, who produced mixed goods of linen and cotton. Great Britain, at that time, used every means to prevent the introduction of her spinning machinery into other countries. Her law expressly forbade its exportation; and every attempt to import the machinery into America had failed. The Hon. Tench Coxe, of Philadelphia, entered into a bond with a person, who engaged to send him, from London, complete brass models of Arkwright's patents. The machinery was completed and packed, but was detected by the examining officer, and forfeited, according to the existing laws of Great Britain. No way remained to obtain the benefit of the British inventions but to manufacture them on our own soil. For this purpose, Mr. Slater came to America. He had been a pupil of Arkwright, and was perfectly familiar with all his patents. He brought with him neither patterns nor memoranda to assist him in his work, but depended entirely on his memory, a thing that the statutes of Great Britain could

not reach. The King of England had frequently made proclamation against any tradesman leaving the kingdom, and had called on his officers for their most vigilant watch against it;* but the professions of men leaving the kingdom could not always be detected.

Some of the first yarn made by Mr. Slater in America, and some of the first cotton cloth made from it, was sent to the Secretary of the Treasury, on the 15th of October, 1791; and it is probably in existence now. It is stated† that Mr. Clay had some of the first yarn in his possession in 1836. It was as fine as number 40.

Mr. Slater was induced to leave his employment under Arkwright, in England, to come to America, by seeing a premium offered by the Pennsylvania Society, for a certain machine to spin cotton.

Mr. Slater labored under the greatest disadvantages, for the want of suitable materials, and mechanics of sufficient ingenuity to assist him. The history of his first labors is deeply interesting, for the details of which we must refer the reader to his biographer. His first machine was what is called a water frame, of only twenty-four spindles. Such was the humble origin of cotton manufacturing in America. From that first machine the advancement of the cotton manufacture has been truly astonishing. It has caused hundreds of populous villages, towns, and even cities, to spring up, as if by magic, where only a few years ago nothing was seen but a barren wilderness.‡

*Life of Samuel Slater, by G. S. White, p. 88.

†Idem, p. 89.

‡Astonishing as has been the increase of the various manufacturing towns and villages in the United States, Lowell, in Massachusetts, surpasses everything of the kind that has been witnessed within the memory of man. In 1819 its site was a wilderness, whither sportsmen went to shoot game. The entire population of the territory around it did not exceed 200 souls. It was a poor, barren district, with but a few houses on the place where the city now stands; and the inhabitants supported themselves principally by fishing in the Concord and Merrimack rivers, at the junction of which Lowell is situated. A company of wealthy men in Boston, seeing the valuable water privileges of the spot, purchased it for manufacturing purposes. The first cotton mill was erected there in 1823; and in 1830 the population of the place had increased to 6,477 persons. In 1840 the population had become 20,796; and the value of property there was $12,400,000. In 1844 the population was 25,000. It is now 35,000. Thus, what only thirty years ago was a wild pasture ground, has become a large and flourishing city—a proof of what water-power, seconded by capital and enterprize, can do for a place. Lowell is a splendid example of an American manufacturing city, and excites the attention, and, in some measure, the jealousy, says McCulloch, of Manchester and Glasgow. We need no better proof of what manufactures can accomplish than the history of Lowell. The Lowell cotton-mills, owned by twelve manufacturing companies, extend in a continuous line about a mile, from the Merrimack to the Pawtucket Falls.

The rapid growth of the cotton manufacture in this country is unparalleled in the history of industry. The second cotton mill in America was erected in 1795, at the same place as the first. No more were built until 1803, when a third was erected in Massachusetts, followed by a fourth, in 1804. During the three following years ten more mills were erected in Rhode Island, and one in Connecticut, making in all fifteen mills with 8,000 spindles, producing 300,000 pounds of yarn annually. By a report made to the Government in 1810, it appears that eighty-seven additional mills had been erected by the end of 1809, of which sixty-two were then in operation by horse and water-power, running 31,000 spindles. The cotton manufacture continued to spread, and received a considerable impulse from the war of 1812. In that year there were in Rhode Island thirty-three cotton factories, with 30,663 spindles. In Massachusetts there were twenty-three mills, with 17,371 spindles.

A report made to Congress, in 1816, gives the following statement of the consumption of cotton by our mills, showing how rapidly the cotton manufacture had advanced. The consumption of cotton was, in

1800.....	500 bales.
1805.....	1,000 "
1810.....	10,000 "
1815.....	90,000 "

The following statement is also officially made in the same report, showing the state of the cotton manufacture at that time:

Capital employed in 1816....	$40,000,000
Males over 17 years old.....	10,000
Women and female children,	66,000
Boys under 17 years.....	24,000
Cotton cloth manufactured...	81,000,000 yds.
Cost of same.....	$24,000,000
Raw cotton, 90,000 bales, or	27,000,000 lbs.

The subject of protection was then extensively agitated. The importations of cotton goods, in 1815 and 1816, were immense, and created great alarm among the manufacturers. The amount of importations of those two years was about

$180,000,000. During the years 1817, 1818 1819 and 1820, great distress prevailed among the manufacturers, but Congress was not disposed to grant their petitions in full.

Tariff laws were passed in 1824, 1828 and 1832, in each of which the duty upon foreign cotton goods, imported, was 25 per cent. *ad valorem*. These duties, though they did not prevent our markets from being glutted with foreign goods, caused our manufactures to gradually increase.

In 1820, the first cotton mill in Pennsylvania was erected at Manayunk, by Capt. John Towers. There were then only two small cottages on the spot. It now contains 500 dwellings, 5 churches, 15 stores and about 30 mills.

Amongst the numerous towns that have sprung into existence, owing to the influence of manufactures, may be mentioned—Waltham, Patterson, Ware, Fall River, Taunton, Pawtucket, Lawrence, Adams, Newmarket, Matteawan, Norristown, Pa., and Gloucester, N. J.

In 1840, there were in the United States about 1025 cotton mills, with about 2,112,000 spindles. These mills were distributed as follows:

In Massachusetts	310
New Hampshire	70
Vermont	30
Rhode Island	130
Connecticut	120
New York	120
Pennsylvania	80
New Jersey	55
Delaware	17
Maryland	30
Ohio	10
Virginia	10
Kentucky	10

Many of these were small establishments, with not more than 1,000 spindles; there were, also, at that time, numerous small factories in the Western and Southern States, not included in the above statement. In 1840, the

Cotton used annually in our mills, was	106,000,000 lbs.
Capital invested, was	$80,000,000
Annual value of cotton manufacture	60,000,000

In the same year, there were in operation in the New England States, 1,590,140 cotton spindles. The whole number of spindles in the United States in 1850, was 2,500,000, showing an increase of 20 per cent in the last ten years.

THE PREPARATION AND USE OF MANURES.

BY DANIEL LEE, M. D.

All manures, from whatever source derived, should be regarded as part and parcel of the soil, and studied in that connection. It is usual to consider them under the heads of animal, vegetable and mineral manures. Animal manures are either animal substances, like the flesh of a dead horse or sheep, or the excrements of animals, voided of the bowels and kidneys. Vegetable manures differ from the dung and urine of herbivorous animals, in being less concentrated, and containing in a given weight more carbon (coal) and more of the elements of water, (oxygen and hydrogen.) Decaying vegetables, not consumed by animals, yield vegetable manures.—Mineral manures differ from both animal and vegetable in being in a wholly disorganized state, like gypsum, burnt bones, wood ashes, ammonia and carbonic acid. Of all animal manures, the excrements of dunghill fowls and seabirds, called guano, approximate nearest to those which are minerals, or in a disorganized condition. Comparatively speaking, guano contains very little carbon and oxygen, and a large percentage of nitrogen and phosphorus.

In no department of rural economy is American labor more unskilfully expended than in the collection and use of manures. This arises partly from the low price of crops, which discourages the critical study of fertilizers, and partly from the lack of good schools and experimental farms for teaching such labor-saving processes as may be best adapted to the peculiar circumstances of the cultivators of the soil in the several States. Different crops, prices, soils, climates and variations in value and kind of farm labor, all modify practice, and render the effort to lay down general rules in manure-making exceedingly difficult and hazardous. We shall venture, however, to indicate two or three plans for collecting and applying manures, which experience has shown to be highly advantageous.

In all cases where it can conveniently be done, domestic animals should be fed under a shelter of some kind, to protect them from the

sun and rains of summer, and the cold and storms of winter. In this way their droppings may easily be gathered into heaps, keeping the dung and urine together, and both from loss by volatilization, and protecting the mass from the washings of rain or snow water and natural drainage. Where manure has to be hauled any considerable distance, it is bad policy to add weight to it by applying water, with the view to promote fermentation or the rotting of the heap. Suppose one has ten tons of dry straw or cornstalks, it will not pay to add, as is often done, forty tons of rain-water, so that the farmer actually hauls four tons of simple water into his distant fields to convey thither one ton of vegetable matter. If one's soil is so dry that straw and cornstalks will not readily decay when ploughed in, sound economy dictates the making of all compost heaps in the field where the manure is to be used. This will save the hauling of an immense quantity of water; for every ingredient used in making the compost may go into the field in a dry state. Leached or dripped ashes should be well dried to diminish their weight before hauling; the same remark will apply to swamp muck or mud, to forest leaves, straw and trash of every kind. Rains are expected to supply the necessary amount of water; although it will often pay to dig wells in fields to have water for this purpose and for stock in all coming time. A large reservoir, deep in the ground, and made tight by water-lime cement or good clay, to hold surface-water in case living water is not attainable, will pay a good interest on its costs. The excrements of domestic animals, particularly their urine, will hasten the decomposition of coarse straw, stalks and muck; but it is better to haul the dung and urine of domestic animals to distant compost heaps than so many tons of valueless water. Without the admixture of the excreta of animals, all vegetable substances placed in the compost heap will rot, and stable manure may be more economically applied directly to the land that needs it. As a general rule, the sooner a plant designed to fertilize the soil is buried in it, the better. It can never yield a larger quantity of carbon, hydrogen, nitrogen, oxygen, or earthy salts, by passing through the digestive organs of any animal, or by lying a day or year in a manure or compost heap. In case one has poor land, and desires to produce a large crop in a few weeks or months, as in market-gardening, then the previous rotting of manure or vegetable substances is indispensable to feed many growing plants up to the highest point of vegetable nutrition. But on fair soils, in common field culture, this great labor of of preparing food for crops is unwise husbandry. Let the entire decomposition take place in the soil, as is witnessed when clover, peas, or other plants are turned under with the plough. If it was convenient, all the droppings of animals should be immediately covered in the soils which most lack fertility; for they will lose more than they can gain by keeping it above ground. But so speedy and constant an application of manures would interfere with other necessary labors on the farm, and hence the safe-keeping of fertilizers until needed is a matter of importance. It is excellent economy to provide a bed of dry straw, forest leaves, or peat, to absorb all the urine of domestic animals. In what is called "box-feeding," both the dung and urine of fatting oxen, sheep and hogs, are intimately mixed with straw, or some other good absorbent, and trodden under the feet of the animals. As the latter consume meal and roots, their excreta are obviously rich in the elements of fertility. The animal is turned loose in a small pen or box, being fed regularly and well supplied with litter for bedding. The mass of manure thus formed is rarely disturbed until it is applied to the ground, either as a top-dressing or to be mingled with tilled-earth. As a general rule, it is desirable to cover manure with from three to nine inches of soil. If it is light, porous and sandy, manure should be buried deep; if compact and impervious, a covering of two or three inches will suffice to retain all gaseous elements. Manure moves both downward and upward, as well as laterally, in tilled ground, and therefore on a medium soil it should be placed mid-way in the earth stirred with the plough. If the ground is broken ten inches deep, five inches of the soil should lie above the manure and five below it.

All organic and mineral fertilizers dissolved in water will enter so far into a chemical combination with the soil when applied to it in irrigation, that nothing will be lost by atmospheric and solar

influences, unless the quantity applied to it per square rod is needlessly large. This speedy and thorough incorporation of fertilizing substances with the soil when dissolved, has led many to attempt the complete solution of the manure before it is applied to the land, knowing that it cannot enter the roots of plants to nourish them before it is dissolved in water, or reduced to a gaseous state. By bringing all fertilizers made in stables and yards in a liquid form, the manure is easily conveyed in wooden pump-logs or pipes made of burnt clay, into the several fields on the farm. If the fields are lower than the barn or stable, the water will run to them in pipes by its own gravity; and if higher, horse-power, or a small steam engine will force the liquid up to their level. Operations of this kind are successfully practiced in England. Hose is used to distribute the water over the surface in the fields; and thus they are both manured and irrigated at such times as the application will do most good.—*Patent Office Report.*

From the Southern Agriculturist.

AGRICULTURAL EDUCATION.

The Hon. Marshal P. Wilder, chairman of a board of commissioners appointed by the Legislature of Massachusetts, has written an extended and interesting report on the subject of Agricultural Education. It contains an instructive account of the principal colleges and schools in England, Scotland, Ireland, France, and other continental nations, designed to teach the several arts and sciences which pertain to rural affairs, from the pen of Professor Hitchcock, who devoted some months, while abroad, to collecting the information given. The Royal Agricultural College at Cirencester has six professors and 700 acres of land for agricultural purposes. The object of this institution is to prepare young men to become intelligent proprietors of farms, or to superintend in the most skillful and successful manner the farms of others. From the unhappy operation of *caste* in English society, says Professor H., and from the want of governmental patronage, this college is not so well attended as its founders anticipated. There are accommodations for 200 students, but only fifty now belong to the school. Those residing in the building pay $355 annually; those who board elsewhere, pay $175. Formerly, the school was open for the sons of smaller farmers, but could not find support on that plan, and it was found that, if these attended, the wealthier classes would not send their sons. The price, accordingly, has been raised, and none but the sons of gentlemen, such as clergymen and wealthy laymen, now attend. None of the nobility send their children, though many give their money for its support.

The impassable barriers of *caste* happily, do not exist in this Republic; and it would be impossible to establish an experimental farm of 700 acres, erect suitable buildings to accommodate 200 students, appoint six able Professors, aided by museums to illustrate natural history, comparative anatomy, vegetable and animal physiology, and provided with a chemical laboratory for making original researches, cabinets of minerals, and all other needful appliances, and not have the institution crowded with students.

The agricultural school at Grignon, near Paris, is in a much more flourishing condition. "In going through a stable," says Mr. H., "containing a number of fine cattle, I observed one young man with water and a broom, cleaning the legs of an ox, which had laid down in his leavings. The director whispered to us that that young man was the son of a wealthy banker. Indeed, the pupils all appeared as if they had not been accustomed to labor. Formerly, pupils were admitted from the laboring classes to attend the lectures, without residing in the institution, but they are now excluded. They now pay 750 francs, or $138, for board, and receive nothing for their labor. This institution receives $1,100 from government annually."

Already it has sent out about 600 pupils, and the present number is about 80. The farm connected with the institution contains 750 acres. The system of instruction and study is extensive and thorough, embracing algebra, geometry, mechanics, surveying, levelling, stereometry, (measuring solid bodies,) linear drawings, in the mathematical sciences; meteorology, mineral chemistry, mineralogy, geology and botany, in the physical sciences; organic chemistry, or agricultural technology, agriculture, arboriculture, sylviculture, veterinary art, agricultural zoology and equitation, in what are denominated techno-

logical sciences; and rural architecture, forest economy, farm accounts, rural economy, and rural law, in the noological sciences. There are six professorships, and three years are required to go through with a course of study.

At Versailles there is a National Agronomic Institute, employing nine first class professors and 3,650 acres of land. The report of Professor Hitchcock fills over ninety octavo pages, and we regret our want of room to give copious extracts from this truly valuable contribution to the agricultural literature of the United States. It is a work of great labor and condensation. Without the text, the thirteen tables would be nearly unintellible. The following summary, however, will indicate the territory surveyed:

"But though my list is doubtless deficient, I have been amazed, as I doubt not the committee will be, at its extent. The following summary will bring the whole subject under the eye:

SCHOOLS.	Sup'r Schools.	Intermed'y Schools.	Inferior Schools.	Special Schools.	With Colleges and Universities.	Total.
In England,	1	..	4	..	...	5
In Ireland,	1	25	34	..	3	63
In Scotland,	..	..	..	..	2	2
In France,	5	..	70	..	..	75
In Italy,	..	..	1	..	1	2
In Belgium,	..	3	2	1	3	9
In Prussia,	3	2	12	13	2	32
In Austria,	4	..	3	25	1	33
In Wurtemburg,	1	2	1	3	..	7
In Bavaria,	1	1	32	1	..	35
In Saxony,	1	3	..	1	..	5
In Brunswick,	..	1	1	..	..	2
In Mechlenb'g Schwerin	..	1	..	..	..	1
In Schleswig Holstein,	..	2	2	..	..	4
Principality of Anhault,	1	1	..	..	..	2
Grand Dutchy of Hesse,	..	2	..	..	..	2
Grand Dutchy Weimar,	..	..	..	..	1	1
Dutchy of Nassau,	1	..	..	..	..	1
Electorate of Hesse,	1	..	..	..	..	1
Grand Dutchy of Baden,	..	1	..	..	..	1
Dutchy Saxe Meningen,	..	..	1	..	..	1
Russia,	2	10	51	4	1	68
Total,	22	54	214	48	14	352

The 22 "superior schools" in the above list will rank with our best colleges in the extent and variety of sciences studied, while the 54 "intermediary schools" will compare favorably with most American colleges. It is remarkable that the United States should not contain a single institution of the kind, and that all efforts to establish one in the great State of New York, for the last thirty years, should prove unsuccessful. Nor has the report of the Massachusetts commissioners been favorably acted upon, even in a State so distinguished for its liberality to all other educational institutions. One serious impediment has been the lack of well qualified gentlemen to fill the several professorships. These must be educated in Europe before we can establish a first class professional school. When medical schools were first founded in this country, nearly all our teachers of anatomy, physiology, surgery, theory and practice of physic, &c., were educated abroad.

Professional schools of a high character could be established in no other way. Doubtless Congress might establish an institution of the scientific grade of West Point Academy, and procure such gentlemen as Liebig, Agassiz and Boussingault, to serve as teachers until a reasonable number of talented Americans could be prepared to fill professorships in State Agricultural Colleges. At present, we not only lack institutions of this kind, but gentlemen duly qualified to teach all the sciences that legitimately appertain to the noble profession of agriculture and husbandry. The people of the United States have over three hundred millions of dollars invested in domestic animals, and if a young farmer, engaged in stock raising, wishes to study the digestive organs, the muscles, nerves, or blood-vessels of the horse, cow, sheep or hog, there is not a museum in all America where this can be done, and he must cross the Atlantic for the purpose, or remain in ignorance. We do not depend exclusively on books to teach the anatomy and physiology of man, but make dissections, have occular demonstrations, and valuable museums, still further to illustrate all parts of the system, both in a healthyi and diseased condition. Why should we be so unwilling to form agricultural museums? Why so reluctant to provide facilities for the successful study of the organization of valuable domestic animals, with a view to preserve their health, increase the growth of flesh, fat and wool, and the

production of milk, butter and cheese? Will it be said that a knowledge of all this living machinery is of no value to the country? Is there no chance for additional improvement in thirty millions of sheep which elaborate wool and mutton, nor in the five or six millions of cows which yield all the products of the dairy in the United States? On the contrary, is there an intelligent man in the Union who does not know that nine-tenths of all our domestic animals, from the horse down to dung-hill fowls, are susceptible of very great improvement?

In 1818, William King, of Wurtemburg, established an Institute of Agronomy and Forests on the royal domain, of some 825 acres, having one director, six professors, four functionaries charged with various labors, besides two tutors who hear lessons in the school. The instruction given is embraced in *forty courses,* divided into three groups, as follows:

1. Agricultural matters. 2. Forest matters. 3. Auxiliary sciences. In the first course are included—1. Of climate. 2. Of soil. 3. Of manures. 4. Of tools and implements of tillage. 5. Of clearing up of ground. 6. Of meadows and pastures. 7. Of agriculture in general; this is divided into plowing and other tillage, seed plots, of grain and root-culture, threshing and preservation of grain, &c. 8. Of special agriculture. All cultivated plants are treated of particularly. 2d course—Viticulture. 1. Culture of the vine. 2. Wine-making. 3d course—Culture of fruit-trees. 4th course—The rearing of cattle; the races; the crossing; the young. 5th course—The rearing of the horse; natural history of the horse; different methods of raising; choice of animals for reproduction; treatment of mares; treatment of colts. 7th course—Rural Industry in *winter;* the manufacture of beet-sugar; of liquid manure; of malt-beer and brandy. In *summer,* manufacture of beer, vinegar, cider, lime and draining tiles. 8th course—Rural Economy. Valuation of real estates; general circumstances of the country; of farms in general; of different parts of the same farm; of the home means of maintaining its fertility; of system of culture; of labor and the internal organization of a farm; relation between the number of beasts and land worked; of capital of the undertaker or farmer; of the different modes of working a farm. 9th course—Agrtcultural book-keeping, &c.

Auxiliary Sciences.—1st course—Higher arithmetic. 2d course—Algebra. 3d course—Planimetry. 4th course—Stereometry. 5th course—Trigonometry. 6th course—Applied geometry. 7th course—Mathematics applied to forests: 1. Of the culture of trees and of the entire forest. 2. Of the increase of trees. 3. Of the valuation in money of forests. 8th course—Physics. 9th course—Mechanics. 10th course—Chemistry. 11th course—Oryctognosy. 12th course—Geognosy. 13th course—Vegetable botany and physiology. 14th course—Special and rural botany. 15th course—Zoology. 16th course—Veterinary medicine: 1. Natural history of our domestic animals. 2. Anatomy of the same. 3. Animal physiology. 4. Care to be taken of animals. 5. Of the medicines proper for slight diseases. 6. Description of diseases, pathology and therapeutics. 7. Veterinary surgery. 8. Internal diseases of animals and murrains. 17th course—Of forest law. 18th course—Rural constructions. 19th course—Of preparing plans. 20th course—Drawing of machines.

To illustrate these courses of instruction, the means seem to be very ample at Hohenheim. They are as follows:

The operations on a large farm annexed to the Institute. A forest of 5,000 acres. A botanic garden. A library open twice a week. A geological collection. A mineralogical do. A botanical do. A collection of woods, seeds and resins from the forest. A collection in comparative anatomy. Do. of specimens of wool. Do. of agricultural products. Do. of models of instruments for tillage. Do. for physical science. Do. for chemistry and laboratory.

Students board where they please, at a price from $24 to $120 per annum, but lodge at the Institute. The number of students in 1849 was about 100, but it had been 140 for many years. No less than 1650 finished their education at this seminary within thirty-one years. Dr. Hithcock pertinently asks—"How is it possible that so many, having gone through such a thorough system of instruction, should not exert a powerful influence upon agriculture throughout the community?"

If the number of students appears small, it must be borne in mind that the small town of Hohenheim has seven agricultural and horticultural schools of an inferior grade.

In Saxony there is a superior school, with nine professors, and a domain of 7,355 acres. Brunswick has a superior school with thirteen professors. This practice of subdividing the business of teaching among so many professors, each of whom gives his undivided attention to the advancement of a particular art or science, secures that pre-eminence in German Universities and scholars for which they are distinguished. Is it not possible for the United States to have one school worthy of the Republic?

MARL AND MARLING.

SILVER BLUFF, S. C.,
January 5, 1846.

(*Continued.*)

The precise rationale of the action of lime on the soil, and the manner in which it benefits vegetation, has never been minutely and fully explained. Nature still holds many of the secrets of her laboratory undisclosed. Many, and many of the most important details of her wonderful processes of composition and decomposition and of the vast play of her chemical affinities, yet await the persevering investigation and the penetrating thought of man. I will endeavor to lay before you, succinctly, what is known or rationally conjectured in regard to the operations and effects of lime, so far as may be material to the present purpose.

It is applied to land, either directly or mixed, in compost heaps, and carried out in manure. But for the additional labor, the latter would always be the best method. Where it is used in large quantities, it is much cheaper to spread it at once upon the land, and apply manure, &c., afterwards, as circumstances may dictate or permit. It is sometimes put upon land in the state in which it comes from the kiln, that is as quick or caustic lime. Sometimes it is slacked in water, when it becomes a hydrate of lime. Most commonly it is slacked by mere exposure to the atmosphere, when it assumes the form of carbonate or *mild* lime, that is lime combined with carbonic acid, which it extracts from the air in the proportions I have already stated. It is in this form that it is found most abundantly in nature. Sulphate and phosphate of lime are also found, but quick lime never. The lime in shells, marble, limestone, marl, &c., is usually all of it the carbonate. Its action, however, in the long run, is always the same, whether applied in the mild or caustic state, being dependent on its intrinsic properties as lime. When caustic, it at first rapidly decomposes whatever of vegetable fibre or animal matter it comes in contact with. But its caustic quality is soon exhausted, or rather it soon becomes changed itself by the action of the substances it meets, and thus looses its causticity. On lands containing a great excess of vegetable matter, such as peat and rich bog, and where rapid decomposition is desirable, quick lime is the best form of application, if equally cheap, as it saves time and renders the soil productive much sooner than the carbonate will do it.

Although lime is found most commonly combined with carbonic acid, the fact is owing more to the abundance of that acid which exists in the atmosphere, in water, and is continually arising from vegetable decay, than because it has any affinity for carbonic over other acids. On the contrary, it will yield it up, and combine in preference with almost any other. Not only the strong mineral, but most vegetable acids, even vinegar, as I have before mentioned, will drive it off. The effervescence which takes place when carbonate of lime is thrown into them, is caused by carbonic acid escaping in the form of gas. From this great affinity of lime for all acids, results one of its primary and most important effects on soils. Acids are antiseptic, and arrest spontaneous decay. Lime combines with them wherever it finds them free from other combinations, and neutralizes their injurious effect. Hence, on lands that we call sour—and on many that are really sour without our knowledge of the fact—all land covered with broom sedge, for example—it is invaluable. It destroys the sourness, and thereby promotes the decay of whatever matter may have been locked up by acids, which is calculated to nourish useful vegetation. From this quality of lime, it is denominated an alkaline earth—alkali being the reverse and antagonist of acid. Whenever an acid and alkali meet,

they neutralize one another in certain proportions, and form what is called a salt. For instance, our common salt is muriatic acid, and the alkali of soda. So carbonate of lime is in fact itself a salt.

These salts, and especially those of which lime is a component part, are of the highest value in agriculture. Some of them are soluble in water, and these are the most valuable. It is in fact only when they are thus dissolved that they afford any direct nourishment to growing plants, which can imbibe nothing by their roots but watery solutions, and are fed altogether in this way from the ground. But the salts which are readily solluble in water are soon exhausted. Every shower dissolves them, and whatever surplus is left after the plants have absorbed the solution to the extent of their capacity, is liable to escape by evaporation, or to be carried by the water into the earth below the reach of vegetation, or to run off to the streams. Salts, then, that are not immediately soluble in water, if they can be made sollu ble gradually, are in the long run the most useful to the farmer. Of this class are most, if not all, of the salts formed by lime. Carbonate of lime is indeed wholly insoluble in pure water, and if lime remained forever in that state it would be of little value in the soil, other than its mechanical influence on the texture of it. But if carbonic acid be added in excess—that is, more of it than 44 parts in 100, which are required to make the carbonate—this salt becomes soluble. This excess is in point of fact constantly furnished in small quantities by the air, by rain-water, and by the decay of vegetable substances in the ground, and hence one advantage from keeping lime near the surface. The lime thus dissolved enters into the plant and feeds it. In this way, and this way only, it is a direct manure. All its other influences are indirect, on which account it is most generally regarded as a stimulant rather than a manure. I am speaking of course of carbonate of lime as it exists in our marls, and not of the sulphate or phosphate of lime.

Its indirect action, however, is as important as it is varied. I have already said it promotes decay by neutralizing acids. But while lime, from its neutralizing power, promotes decay, by arresting the influence of acids and giving efficiency to the legitimate agents which accomplish it, it is a watchful guardian over their action, regarding their wasteful haste, and sometimes wholly preventing further progress for a time. It expels, for instance, from decomposing substances ammonia, which is the most active and rapid conductor of putrifying contagion, driving it into the air to descend in future showers, or if they are at hand, into other substances less advanced in the stages of decay.

The ultimate result of the vegetable decomposition thus judiciously forwarded by lime, is a substance to which various names have been applied by chemists, such as *"humus," "geine," "ulmin,"* &c., which, so far as agriculture is concerned—their treatment and influence on the growth of vegetation—are one and the same thing—meaning, substantially, that residium of decomposition which is familiarly known to us as "vegetable mould," without a sufficiency of which in our soils, we are all aware that compensating crops cannot be made. In the progress of decay the most soluble portions of this mould are exhausted, and assume new forms, and what at last remains apparently fixed in the soil is the undissolved sediment. This is said to be wholly insoluble in water, but when plowed up and frequently exposed to the action of the air, it becomes so, sparingly. Yet, without aid from some other source than the atmosphere, water will not furnish it to plants in sufficient quantities for their vigorous growth. Now the alkalies and alkaline earths—lime being the most important in this last class—act directly on this insoluble substance. Their presence—and it is a singular but well known principle in chemistry, that *mere presence* is a power called catalytic—induces it to absorb oxygen from the atmosphere, and to produce what is called humic acid. With this acid the alkalies immediately combine and form salts, called humates, which are soluble in water, and afford nourishment to plants. Thus when lime is properly applied to land, it brings into fruitful action the hitherto inert vegetable mould.

But it must be obvious that if no additional vegetable matter is given to the soil, the effect of lime will be to exhaust it utterly, in a shorter time than might otherwise be done by cropping. Hence the saying, that liming land enriches the father but impoverishes the son. It must not be

forgotten, however, that the lime has enriched the father, by giving to his crops food that would otherwise have remained dead in his soil, or been eliminated by other agents, through a series of years, in feeble proportions, to scant, and therefore profitless crops; while, if it impoverishes the son, it is because a wretched husbandry has taken all from the land, and given nothing in return. The exhausting effect of lime is mitigated, however, by another highly important intermediate condition of the process. As the mould disappears, the proportion of lime to mould of course increases, and the lime becomes excessive. When this is the case, the humate, which before was soluble, becomes wholly insoluble in water. The process of decomposition then ceases for a time. And such is the case very soon, wherever lime or marl, in very large doses, is put on land possessing but little vegetable matter. It is called "marl burnt" among the marlers, many instances of which I can point out on my plantation. In the course of cultivation, however, the lime being constantly exposed to the atmosphere, absorbs carbonic acid, which combining with a portion of it, converts it into carbonate of lime again, and thus freeing the humate, or a part of it, of the excess of lime, renders it soluble once more. But this is a very slow process, and unless there are immense quantities of vegetable mould which have been thus locked up by an extraordinary and injudicious application of lime; and probably, even then, the proper plan is to remedy the evil at onoe, by a heavy coating of vegetable matter brought fresh from the woods. When this cannot be effected, we should give the land a long and absolute rest, allowing every particle of vegetation it produces to rot upon it, and if it can be conveniently done, to plow it in. The best of all methods, however, to restore the land, and not always the most expensive, would be to add a sufficiency of compost manure. Besides the amount of decayed vegetation which such manure would supply, the alkalies, potash and soda are always generated in compost heaps. These act directly on the insoluble humate of lime, decompose it by their greater affinity for the humic acid, and form new salts which are quite soluble.

Instead of objecting to this action of lime in locking up the food of plants, and its constant tendency to do so when that food is not made abundant by good husbandry, we should rather regard it as one of its most valuable properties. The vegetable mould was dead in the soil. It could not be carried away, but it was of little value as it stood. The lime by its presence persuades it to decompose in sufficient quantities to nourish a luxurious growth of plants. So soon as the mould begins to become scarce, the lime confines it in its embraces, and preserves it from the wasteful influence of heat and moisture. Yet to the industrious farmer, whose constant furrows give access to the atmosphere, it yields up what a prudent enonomy would dictate under existing circumstances, to promote the growth of vegetation. If that vegetation is permitted to remain and decompose upon the land, vegetable mould, in time, becomes abundant again, and the lime prepares it to furnish ample food for heavy crops again. If all the produce is taken off, the lime, more provident than the farmer, and more generous too, still preserves what remains in the soil, for the exclusive use of the crop, and doles it out until all is gone.

The influence of lime upon the mineral substances of the earth is scarcely less powerful and important to the farmer than the vegetable. The chief mineral constituents of the soil are, as you know, sand and clay. They are usually resolved by agricultural chemists into what they call silica and alumina, which are silicon and aluminum, their ultimate principles, with a little oxygen absorbed from the atmosphere. Of these two, silica is much the more abundant, as well as perhaps the more valuable. After what we call clay has been deprived of its sand by washing, in which state it is usually denominated pure or agricultural clay, it still holds in chemical combination from 50 to 60 per cent of silica. The purest pipe clay we find is half silica; and the stiffest red lands of your county probably contain at least 70 per cent of it and not more than 15 per cent of alumina. Lime and alumina have a strong affinity, and from their combination and subsequent decomposition results the important fact, that the stiffest clay lands are rendered light and mellow by liming. The rationale of this process has never been satisfactorily explained. The effect is usually referred to the mere mechanical operation of the lime. But this cannot be so, since

a hundred, or at most a few hundreds of bushels per acre of one earth, could not materially alter the texture of another to any depth. It is probable that the crumbling of the clay, after liming, will be found owing to the condensation by severe cold of the carbonic acid supplied by the lime, and its extraordinary power of expansion under the influence of returning heat, since this disintegration of stiff lands has never been observed until a winter has elapsed after the application of the lime or marl. Alumina will not combine with carbonic acid; and it may be that clay lands are opened partly by the incessant changes occasioned by the affinity of lime for both. Being insoluble in water, alumina furnishes of itself little or no aliment to the growing plant, though it has other indirect influences fully in proportion to its conspicuous position as a constituent of soils.

(*To be continued.*)

From the Horticulturist.

ON THE EXCRETION OF PLANTS.

BY THOMAS MEEHAN, GARDENER, TO CALEB COPE, OF PHILADELPHIA.

Every person connected with the cultivation of the soil is aware that soils wear out, or become exhausted, by being constantly cropped with one kind of plant. It has been supposed by many, that the soil under such circumstances becomes impoverished by the plant. Others, again, conclude that it is poisoned by excrements thrown off by the roots. I propose to examine the arguments advanced by the latter, not with the object of showing that the soil may not be deteriorated by the excrements alluded to, but that they have hitherto failed to prove even the probability of the hypothesis.

It seems to be admitted that plants excrete indigestible matter from their roots. "The roots not only absorb fluid from the soil, but they return a portion of their peculiar secretions back again into it, as has been found by Brugmans, who ascertained that some plants exude an acid fluid from their spongioles; and also by Mr. Macare, who has proved that to excrete superabundant matter from the roots, is a general property of the vegetable kingdom." (*Lindley, In. Bot., book ii., chap.* 2.) "If we place a growing bulb in a vessel of water, but do not change the water, in a few days a slimy substance appears in the water, evidently an excretion from the roots." (*Horticulturist, vol vii., p.* 507.) "If you place a succory in water, it will be found that the roots will by degrees render the water bitter, as if opium had been mixed with it; a spurge will render it acrid, and a leguminous plant muscilaginous. And if you poison one half of the roots of any plant, the other half will throw the poison off from the system." (*Theory of Horticulture, par.* 40.) "An apple orchard will not immediately succeed upon the site of an old orchard of the same kind of fruit. No amount of manure will enable it to succeed. Dahlias do not 'like' the soil in which dahlias grew last year. (*Ibid, p.* 284.)

All the extracts, except the last, show that plants do excrete from the roots certain substances. The last extract is one of many observations which have been recorded to show that successive cropping *deteriorates* soil. That there is some change in it, is undoubted; but that it is caused by their excrements, is *assumed*. We know that each individual plant absorbs from the soil peculiar elements, or, at least, peculiar proportions of various elements. This has been proved by chemical analysis. Have the excrements of any given plant been subjected to the same ordeal, and the nature of the assumed poison been detected? Would it prove to be arsenic, opium, or any of the metallic or alkaline poisons, that are known to be as destructive to vegetable as to animal life? Whether with the idea of showing the injurious effects of excrementitious matter or not, such an analysis would be highly interesting to those who cultivate the soil. The idea that it injures the soil, seems to originate from the apparent impossibility of a plant taking up again what it has thrown off. But it has been proved that the matter thus thrown off must necessarily remain unaltered in the soil, and may not be immediately changed, by conjunction or chemical affinity with other substances, to matter useful to the growth and existence of the plant? It has been inferred by a correspondent of the *Horticulturist*, in the page quoted above, that many of the deaths which are supposed to result from sour soil and over-watering, are rather caused by an accumulation of excrementitious

discharges. Has there been anything discovered by which to prove that this sourness is not what most gardeners take it to be—the result of an acid? I, and no doubt the majority of my practical brethen, have frequently observed that the greater the amount of organic matter in soil, the easier does it sour. We are particularly anxious to avoid the use of leaf mould in any other state than well-rotted, on that account. An abundance of water is favorable to the decomposition of organic mattter; soils contain a peculiar acid analogous to humic acid, produced during the decay of vegetable matter, which is hurtful to the growth of plants." (*Solly. Rur. Chem., par.* 313.) Lindley himself, one of the advocates of the excrementitious doctrine, suggests "that the subject has hitherto been so little investigated, that it is not safe, perhaps, to take it as the basis of a theory." (*Theory of Horticulture.*) And since his time, Henfrey, the most searching of modern physiologists, considers the theory "entirely without foundation." (*Henfrey's Outlines Vegetable Physics.* I quote from memory.)

Although there seems, then, to be no evidence that the excrements of plants have the injurious effects on the soil they are charged with, the discussion of the subject has been productive of good. It has caused attention to be called to the nature of impoverished soils and its causes, which must in the end produce knowledge which will be of undoubted interest to the cultivator of the soil.

REMARKS OF THE EDITOR OF THE HORTICULTURIST.

The question regarding the excretions of plants stands at the present moment as unsettled and debateable as ever. Duhamel, we believe, was the first to call attention to it, being led to suspect excretions on account of the earth adhering to the young roots, or spongioles of plants. Brugmans, Decandolle and others, took it up and collected a large number of facts, familiar to readers on this subject, bearing upon the point, and furnishing a sort of circumstantial evidence in favor of such a theory. Macaire Prinsep, at the suggestion of Decandolle, made a series of experiments to test it, by growing a great variety of plants in vials of pure water; and the results were such as gave additional strength to the excretive doctrine, at the time. But practical men were not satisfied with experiments conducted upon plants in such unnatural conditions, and other experiments of a more reliable nature, subsequently conducted by German phytologists, produced entirely opposite results. The theory, therefore, has never been fully established, although we believe that a majority of those who have given the subject attention, regard it with a greater or less degree of favor. For our own part, we do not wholly discard the doctrine. We almost daily meet with cases in practice that persuade us that at least it is not unreasonable. In turning up the soil in which crtain plants have grown—the cabbage and turnip tribe, for instance—we find peculiar odors escape. So in potting or shifting house-plants, we find that different plants impregnate with different odors the soil in which they have grown. This may or may not be due to the process of excretion.

We do not, however, believe that this process is such, in any case, as to unfit the soil to reproduce the plants which grew in it. The fact with which we are all familiar, of the failure of successive crops of any given tree or plant in the same soil, is unquestionably due, in the main, to an exhaustion of the soil, or its loss of the elements essential to the growth and perfection of such trees or plants. Our American agriculture exhibits thousands of instances where, owing to the extraordinary fertility of the land, twenty successive crops of corn have been grown in the greatest perfection, without any renewal of the soil by deep tillage or additional manures. In other soils, two such crops could scarcely be taken in succession. So in regard to other crops. In the case of nursery trees, we have known instances where a single crop of apple trees of four or five years' growth, has so exhausted the soil that a succeeding one of the same trees was a perfect failure, notwithstanding the most liberal culture.

Rotation of crops is an established principle in field, garden and nursery culture; and this, not because plants excrete matters unfavorable to their growth, or favorable to the growth of a different class of plants; but chiefly, as we have already said, because they exhaust the soil of certain elements which are necessary and indispen-

sable to their particular structure, composition and mode of growth. Excretion to some extent is, however, possible, and even probable.

The question is full of interest, not only in a scientific point of view, but as having a direct bearing upon one of the most important branches of culture—the nutrition of plants.

From the Southern Cultivator.

CLOVER IN THE SOUTH.

Messrs. Editors: Believing the cultivation of Red Clover to be highly important to Southern agriculture, I propose to give you some of my experience with this invaluable grass.

An opinion has generally prevailed that Red Clover will not succeed well in a hot climate, but I am inclined strongly to believe, that if it be supplied with the proper food, it will thrive well as far south as 31 or 30 deg. Its chief constituents are sulphur and lime, and when these are abundantly supplied, I have never known a failure. In Eastern Virginia it is grown very successfully on lands which were originally sour and sandy, by suitable application of marl. In South Albama, Red Clover grows luxuriantly in the lime lands, the natural soil being sufficiently calcareous.

I have been raising clover now some eight or nine years with decided success. My plantation is in Marengo county, in the lower or cane-brake lands, and in latitude near 32 deg. I find it unnecessary to re-sow it, as the seed which fall from the plant keep the land sufficiently well supplied and set. This is a great convenience, as it saves the trouble and expense of frequent seeding, clover being a biennial plant.

In England and on the continent, as well as in our own country, it is so common for land to tire of clover, from mechanical as well as well as chemical causes, that the term "clover sick" has become a familiar designation for such lands. But I find my volunteer crops, on land that has been continuously in clover for eight or nine years to be as luxuriant as the first crops.

I have clover lots from five to forty acres in extent. My fattening hogs are put up in January in the horse lots, where they are kept until they are slaughtered in the winter following. Adjoining these horse lots are small clover lots, of four or five acres, to which the hogs are allowed unlimited access from May to November. The consequence is, that they are as fat during the entire summer as when they are slaughtered. As these lots adjoin the public road, nothing is more common than applications for a pair of pigs, to get into my breed of hogs.

My large lots furnish a supply of grazing of the best quality, commensurate with my demands, for milch cows, brood mares and colts, idle horses and beef cattle, during a large portion of the year. The first crop matures about the beginning of June, and if not grazed or mowed, it falls and rots upon the ground, serving to benefit the land both by its shade and a large supply of vegetable matter, besides furnishing an abundant supply of seed. Although well advised as to the value of clover hay, I seldom save any, as the hoe crops at this period require all my labor. When not grazed in the winter and spring, it is allowed to rot on the ground.

The second crop makes its appearance as soon as the nights and mornings become cool, and about the same time a volunteer crop springs up, so that the two crops together furnish good grazing during the entire fall, and a large portion of the winter.

Let me here detail to you the amount of grazing derived from a clover lot of five acres, the eighth year in clover, adjoining one of my horse lots. It may seem extravagant—and it really does so to me, although it has passed under my own observation—but it is literally true, and can be proved by the most respectable testimony, if it were necessary. On the 15th day of December last, there were twenty-one calves, large and small, put in this lot, and they continued on it till the first of May, when they were taken off as fat as seals. The same week, if not the same day, in May, that the calves were removed, sixty fattening hogs were allowed access to this lot at will, from the horse lot adjoining. The hogs were shut out some two or three weeks ago, as fat as need be, in which condition they have been during the whole summer. The calves have been returned to this clover lot, and the clover has been gaining upon the hogs and calves since the first of October.

I find no difficulty in saving seed. The heads are pulled off by hand, and in that state are put

away until sowed. The sower, when he performs his work, takes about a flour-barrel of these heads to the acre, rubs them well between his hands, and sows them as he would oats. This mode has always insured me a good stand. I believe that if all the hands of the plantation were turned in, they would save seed enough for a hundred acres in a day. The seed is saved either from the summer or fall crop, as most convenient. I commenced the cultivation of clover in the lime land, with a full faith in success, from the calcareous character of the land. My chief object was the imprevement of the land. It will doubtless be found invaluable for this purpose, as well as for grazing, but I have not as yet tested its value as a regenerator. I made a beginning this fall by putting a clover lot of fifteen acres in wheat, as follows: The clover lay seven years, was turned in with a four-horse eagle plough, going eight inches deep; two bushels of wheat, well washed and limed, were then sown to the acre, harrowed in lightly, and rolled with a heavy roller. Hill-side ditches were next cut two feet wide and two deep, and water-furrows, parallel to these ditches, made with the plough and hoe, eight feet apart. From such a preparation, may not a crop of some twenty-five or thirty bushels per acre be reasonably anticipated?

As I design to sow a good deal of clover the ensuing winter, some of my present clover land will be cultivated in cotton, and should the result be in any way remarkable, it shall be communicated. I have tested the fact, which had been done before, that a good stand of clover will follow a crop of cotton on clover land.

In conclusion, Messrs. Editors, allow me to say that I have made this communication in the hope that it will interest Southern agriculturists, and direct their attention to a most valuable resource, and one which, if suitably cherished, must advance the comfort and prosperity of many large sections of the cotton-growing region.

Very truly yours,
ISAAC CROOM.

Greensboro, Ala., Nov., 1852.

☞ Cold cream, for sore lips, is made by mixing two ounces of the oil of almonds, one ounce of spermaceti, one drachm of white wax, and melting them together, adding rose water to perfume.

Remedy for Burns.—A gentleman at Dayton, Ohio, in a note to the Dayton papers, says: "While at the supper table, a little child, which was seated in its mother's lap, suddenly grasped hold of a cup full of hot tea, severely scalding its left hand and arm. I immediately brought a pan of flour and plunged the arm into it, covering entirely the scalded parts with the flour. The effect was truly remarkable; the pain left immemediately. I then bandaged the arm loosely, applying plenty of flour next to the skin; and on the following morning there was not the least sign that the arm had beed scalded, neither did the child suffer the least pain after the application of the flour."

White Cup Cake.—One cup of butter, two cups of sugar and three cups of flour, the whites of eight eggs, a small table spoonful of rose-water, milk or cream, to make a thick batter. Beat the butter and sugar to a cream. Whisk the eggs very light, and add them gradually with the flour, add the rose-water and saleratus, and if this should not be quite as thick as a pound cake batter, add a little rich milk or cream. Fill small tins about three parts full with the mixture, and bake them. The yolks of the eggs which are left may be used for a pudding.

Cocoa Nut Cakes.—Three eggs, ten ounces of sugar, as much grated cocoa nut as will form a stiff paste. Whisk the eggs very light and dry, add the sugar gradually, and when the sugar is in, stir in the cocoa nut. Roll a table spoonful of the mixture in your hands in the form of a pyramid, place it on tins, and bake in a rather cool oven until just a little brown.

Corn Bread.—*A New Recipe.*—Everybody who has been at the Mansion House, at Buffalo, N. York, has learned the luxury of the corn bread there provided. The clerk is often taxed to write directions for home manufacture, and I thus procured a recipe for domestic use, which I copy for you, so that those who wish may try a piece of bread from the Mansion. It is as follows: One quart of sour milk, two table spoonfulls of saleratus, four ounces of butter, three table spoonfulls of flour, three eggs, and corn meal sufficient to make a stiff batter.—*Ex.*

Alkaline Washes for the Surface of Trees.—Almost all the alkalies have in turn been used for this purpose. The trunks of trees have been whitewashed with lime, and perhaps this is the worst practice which has been resorted to for the destruction of fungi and insects; and although at the time of its application the lime is caustic, and will decompose parasitical plants, this action lasts but a very short time. The lime becomes converted into carbonate of lime, fills the ultimate surfaces of the bark, and prevents the healthy respiration of the tree; therefore all trees which have been treated with the whitewash, while they present an apparently clean surface, are not in an entirely healthy state.

Solutions of potash, when saturated, were found occasionally to destroy the tree, and this gave rise to its use in the form of soap, which will adhere for a greater length of time, and was found to be less deleterious.

One alkali, (soda,) however, may be used with impunity, without the fear of injuring the bark of any tree; for while it causes the rapid decay of the dead portions of the bark, it has no effect upon the living parts. If the body and branches of a tree be wetted with a saturated solution of a good quantity of sal soda, such as we have often described as Bleacher's No. 1 Soda, it will invariably improve the health of the tree. The inert portions of the bark will be softened, and mosses and other fungi will be decomposed, and the cocoons and ova of insects will be destroyed. During the aftergrowth of the tree, the decomposed portions of the bark will be thrown off, leaving a clean and healthy surface. No tree can be fruitful, and improve in size and figure, unless its bark be perfectly clean.

The application of soda, made by dissolving one pound in a gallon of water, and applied in spring and late in summer, will ensure vigor not attainable without such means, and will do away with the necessity of scraping or slitting trees to prevent their becoming hide-bound. Such trees as have smooth bark may be rubbed with a woolen cloth, one week after the application of the soda, and a shiny smooth surface will be produced.

We have a few trees in which the soda has been applied for three years in succession to the point where the branches commence; and it is now evident that the portion of the tree thus treated is larger and in finer health than the part immediately above it. We first saw this treatment at the seat of Robert Rennie, Esq., New Jersey. —*Working Farmer.*

An Apple Pudding Dumpling.—Put into a nice plate, quartered apples, tie up in a floured cloth, and boil two hours; serve with sweet sauce. Pears, plums, peaches, &c., are fine, prepared in this way.

☞ If you want to keep hore-radish, grate a quantity while the root is in perfection; put it in bottles, fill the bottles with strong vinegar, and keep it corked tightly. You may thus have a supply all the winter.

☞ Tallow greaves, fed in a moderate quantity, are found to have a marvellous effect in the production of winter eggs. We presume unsalted pork scraps or greaves, or any kind of meat, would answer the same purpose.

Water Colors for Rooms.—Take a quantity of potatoes and boil them, then bruise and pour water upon them until a very thick mixture is so obtained, which is to be passed through a sieve. With boiling then make a thick mixture of whitening, and then put it into the potato mixture. To give color, if white is not wanted, add different colored ocres, lampblack, &c., according to circumstances. This paint dries quickly, is very durable, has a good appearance to the eye, and is, moreover, very cheap.

English Fritters.—Put a pound of sifted flour into a bowl, with a good half pint of water, mix it until it becomes smooth, then stir in two ounces of melted butter, and the whites of three eggs, beaten to a very stiff froth. Into this batter dip six russet apples pared, cored and cut in slices a quarter of an inch thick; when the slices are well covered with the batter, drop them into hot lard, and fry them, serving as above.

☞ To preserve meadows in their productiveness, it is necessary to harrow them every second autumn, applying top-dressing, and rollling them up well.



American Cotton Planter.

MONTGOMERY, ALA., APRIL, 1853.

N. B. CLOUD, M. D., EDITOR.

Our Agents.

WM. STRICKLAND, Book-seller, No. 28, Dauphin street; BOULLEMET'S LITERARY DEPOT—corner of Royal and Dauphin street; H. H. CARVER & Co., Battle House Book Store, Mobile; from any of whom the back numbers may be had.

A. P. PFISTER, Exchange Corner; C. R. HANSFORD, Market street, Montgomery.

With *The American Cotton Planter*, our agricultural friends will find all the new and valuable publications of the day, either literary or agricultural, at the above-named Book Stores.

Mr. AMOS TRAVIS is our agent at Gainesville, Sumter county.

Mr. N. PLUMB, Sparta, Conecuh county.

G. M. REYNOLDS Mr. TURNER, Mr. B. M. CLARK, and Mr. M. P. DOUTHIT are our traveling agents.

☞ In our March number, that admirable article of Mr. White, of Georgia, on Southern Peaches, should have been credited to that most excellent journal, the *Horticulturist*.

☞ We find among our exchanges the Southern Agriculturalist, published in good style, at Laurensville So. Ca., and edited, in its Agricultural department, by Col. A. G. Summer and in its Horticultural and Pomological departments by Mr. Wm. Summer. The names of these distinguished gentlemen are sufficient guarantees that the Southern Agriculturalist will prove an invaluable acquisition to the corpse of its colaborers in promoting the cause of improvement in the agricultural industry of the planting states, in stimulating and popularising a taste for horticulture among our planters, so shamefully neglected in this, the home of flowers and fruit. It is neatly printed, covered, containing 32 pages, and afforded at the low price of $1.

☞ Our readers, like ourselves, doubtless will be pleased to observe the air of originality which this number of the *Cotton Planter* presents. We expect soon to have our columns crowded with the practical experience of many of our most intelligent planters, manufacturers and mechanics, on every variety of subjects connected with the industry of our people.

The Material and Appliances for our New Dress are coming.

Our friends will bear with us yet this one month longer, in our homely and ill-fashioned dress. Our public spirited and enterprising publishers, ever willing to lend a helping hand to any undertaking promising the greatest amount of good to the many, have ordered a new and splendid power press, with a full, new font of type, embracing all the latest improvements—direct from Philadelphia. Bright and blithe, on May day morn, we intend to greet you, kind readers, and all the members of the great Agricultural Association, in our new cap and feathers; demonstrating the fact, for which we have almost solitary and alone contended, that even here in Montgomery, in the midst of the cotton fields of the country, we could and would furnish the cheapest, neatest and most tastily arranged (in its mechanical execution) agricultural paper published in the United States. And if the cotton planters of the country desire it, and so *determine*, we will make it the most valuable medium of scientific and practical information to the cultivators of the soil of the cotton region.

Widely indeed have we been misapprehended by those, if any there be, who may have supposed, that in the origin of this enterprise, we intended any pin-hook or catch-penny affair! We have studied our subject long and well. If money merely had been the prompting motive, the *American Cotton Planter* had remained a thing ideal yet to be, and we should have devoted our energy and industry to the practice of physic.

We think we are not mistaken in the central position of our location in the great cotton State of Alabama—new, young and vigorous—producing already one fifth of the cotton crop of the nation, and equally unsurpassed by any State in the Union in her mineral resources—why may she not sustain a high-toned, spirited journal devevotnd to these important interests, that shall visit monthly the hospitable homes of her people, with the why and the wherefore for the most approved industrial operations, in the developement of her resources.

You may not perhaps converse with a single citizen—planter, manufacturer, or mechanic—in the State, who will not at once express himself as gratified and anxious to see a well conducted agricultural paper sustained in our State. With all such, we cordially strike hands, and reply, that a *single dollar* of such anxious gratification, contributed to the *American Cotton Planter*, will not only obtain the paper for one year, but will realize the full measure of such patriotic desire, in sustaining just such

journal as our industry and the intelligence of our planters entitle us to.

Will not our agents and our numerous other kind friends, redouble their efforts, and send us up an additional thousand of subscribers by the first of May? We yet lack a thousand subscribers to prevent embarrassment to the enterprize. In this connection, we must again appeal to our friends to communicate their experience on any and all subjects connected with the industrial interest of our country, for our columns. If you would interest and instruct the working man, whether planter or mechanic, write just as you would talk to him around your social hearth. In this way, an immense amount of instruction and useful information may be disseminated among the producing men of our country.

AGRICULTURAL ASSOCIATION.

In this number of the Cotton Planter, we publish the circular of the Corresponding Committee, appointed by the Convention or Congress of Agriculturalists, assembled in Macon, Ga., last October. The gentlemen composing this Committee are well and widely known in this country. The circular, with the accompanying resolutions of the Convention, will be read with interest, we are sure, by every improvement man in the country—addressing themselves, as they do, personally to every man in the planting or slave States, who feels an interest in the agricultural improvement of these States, and who desires to promote, by all proper means, a speedy developement of the resources of our country. Every such man, as is most wisely provided in the first resolution of the Convention, becomes a qualified member of the Agricultural Association, to be organized in the city of Montgomery, on the first Monday of May next.

We hope our agricultural friends in all sections of the planting States, will take immediate steps to have their societies, where such exist, with their neighborhoods, counties and States fully and efficiently represented at the organization of this most important Association. A nobler object never engaged the attention of any people—to develope the resources, and unite and combine the energies of the slave-holding States, so as to increase their wealth, power and dignity, as members of this Confederacy!

Nature has lavished her bounties upon us with a prodigal hand. Our climate is not surpassed by the Alpine slopes of Italy; the delta of the Nile furnishes no equal to the nation-wide exuberance of our soil, the productions of which, present and prospective, command a world for a market; while our mineral resources, and extent and superiority of timber privileges, are unparalleled in any country. Thus we have briefly a portion of the materials, crude though they be, in the quarry of nature, which it will be the duty and the business of such Association to foster and improve to the proper use and benefit of the planting States.

We are pleased to be able to state to the friends of improvement throughout the planting States, that our fellow citizens of Montgomery are fully alive to the importance of the honor thus conferred by the Convention, in the selection of their city, the capitol of the great planting State of Alabama, as the favored point for the first grand convocation of the Agricultural Association of the Slave-holding States. The iniatory steps have already been taken by both the City Authorities and the Agricultural Society of Montgomery, to make all suitable arrangements to give the delegates from abroad a warm and cordial reception to the city.

Let no man stay away, or treat this truly patriotic enterprize lightly, under the mistaken idea that he may not individually, contribute anything towards the consummation of this great work. No man should hesitate—the time has fully arrived; every consideration of personal interest and national prosperity—the progress of the age, the intelligence of our people, and last, though not least, our relative position, socially and commercially on account of our peculiar labor and industry, to portions of our own country and most foreign nations—speak out in language that no observant man can mistake, that we, the proprietors and cultivators of the soil, are the men to act; that life, energy and the elements of certain success may be imparted to a great national movement of this character.

What are we to do? may be asked by some. The friends of man everywhere, with the clothery and the grannery of the naked and the hungry of the earth, we propose first to unite our energies and our sympathies in the promotion and general adoption among our planters of a proper and economical system of agricultural improvement—with the fixed purpose of directing the influence and patronage of this great agricultural interest to the speedy and full developement of the resources of our highly favored land, which alone can secure for its wealth, dignity and independence.

FAIR OF THE CHUNNENUGGEE HORTICULTURAL SOCIETY.

We have been requested to say, that the fair of the Chunnenuggee Horticultural Society of Macon County, Ala., will be opened on Thursday the 5th of May next at the Society's Garden.

This is one of the oldest societies of the kind in the Southwest, and of it and for it may be truly said—"It has made the wilderness blossom like the rose." Our friends of Chunnenuggee are noted for their public spirit and hospitality. Let every body go to the Fair and fail not to bring away with them some of that same public spirit.

During the last thirty-nine and a half years, it is said, there have been built in the United States, 40,650 vessels, and that more ships, are built in Maine than in all the other States.

Important Enquiries.

"As soon as convenient, will you please publish "the best way to cultivate one acre of sandy land, to make it produce the largest quantity of good food for a milch cow, through the summer and fall; what must be planted, how the seed sown—how the ground prepared; if lucerne, will it do to let the cow graze on it? if millet, how often will it do to cut? if grass, what kind—how sown, and when? Can Irish potatoes be raised in this climate? be saved through the winter and spring? if so, how?

"Your attention will oblige yours truly,

*

The above extract, from a private letter recently received, we deem of much public interest, and we ask the attention of our readers to it, in the hope that some one of our correspondents may be able and willing to furnish the information sought. We have not much experience with lucerne, but from the little we have seen, and the information that we have from the most reliable sources, we suppose that one acre of land could not be so profitably set with anything else as in this article. It does well on sandy land, made rich and limed; and a stand may be easily secured in this latitude. "It requires a deep, rich soil. (See Farmer's Dictionary.) It is often cut, year by year, for six and ten years, and yields in the cuttings each season, from six to eight tons of excellent fodder, equal to the best clover. An acre soiled will supply from three to four cows during the season."

Like clover, it is much benefitted by Plaster of Paris and lime. It must never be depastured. Eighty pounds per day of fresh lucerne is enough for a cow, and produces an abundance of milk. We have observed a lot of red clover at the plantation of Col. Scott, in passing on the Railroad, that has afforded us much pleasure, as a practical demonstration of the fact, that this invaluable article may be successfully cultivated in South Alabama. For further information on the subject of red clover, we refer our correspondent to the excellent article of Isaac Croom, in another page of this number.

With regard to the best mode of saving Irish potatoes through the winter here, we want much information; and as this is one of the objects of the *Cotton Planter*, to collate and disseminate practical and useful information on all subjects connected with the farm, garden and dairy, we hope our friends, whose experience may enable them to furnish the information sought, will respond promptly to the enquiries of our correspondent.

☞ Some kind friend sent us some time since a number of the Selma Enterprise, containing an address recently delivered in that city, on the subject of improving and beautifying home, by transplanting and cultivating trees. We have unfortunately mislaid the paper, and have been unable, therefore, to notice the article as we intended.—Indeed we intended to give the address (being short) a place in our columns, as we are much pleased with that kind of home talk. If this should meet the eye of any gentleman who may have the paper, we shall be favored by the receipt of it.

COTTON—ITS IMPROVED AND TRUE CULTURE.

No. 2.

Entertaining views in regard to the importance of American Cotton such as those expressed in a previous number of this journal, it may not appear surprizing that we should insist upon a system of culture and management in the production of Cotton as nearly approximating to perfection as the present advanced state of agricultural science will admit. Persons unacquainted with Cotton—its culture and peculiarities—passing through South Carolina, Georgia and the older counties of Alabama, and remarking upon the dilapidated appearance presented in the conditions of the cotton plantations of the country generally—the worn and wasted condition of the land, utterly unfit, in very many instances, for any kind of crop, without a vast deal of artificial aid—would very naturally conclude that, of all crops cultivated, Cotton is the most exhausting. Such conclusion, however, we shall be able to show to be altogether erroneous.

We regard this as an extremely interesting feature in the progress of this investigation. A clear and distinct understanding of the recuperative capacity of properly cultivated soil, and the Cotton Plant, as a natural furtilizer, we had almost said, is indispensably necessary, to induce any planter to engage with spirit and determination in a liberal system of improvement at and for a home for himself and family.—If we institute an examination into the true causes that induce our planters to sell out old plantations and remove to new ones, we shall find it to consist *mainly* in this: *To grow Cotton on new and rich land*, every comfort and convenience, with all the social relation of life, are sacrificed for rich land, in a strange country, to grow cotton on! And where is the planter that is not exhilerated with the prospect of rich land to cultivate?

The result of our experience is, that no plant

is equal to the Cotton Plant as a fertilizer; hence we make the point, that to grow cotton under that system of culture which is most profitable to the planter, any land will improve and grow rich. We ask the attention of the reader to a plat of cotton stalks growing—large, if you please, for such we prefer—on a level or leveled piece of land; pass with it through all the stages of the season and work; and you find that whatever of grass or weeds be cut up about it, remains and decays there; every fall of rain sinks into the soil there where it falls; every leaf that drops there decays—so of the blooms, the burs, the stalk, and, finally, the seed from the gin, by the provident planter returned to the soil; and a bale of lint, or $50 realized per acre.

Let us ask now—and we appeal to practical, thinking men—what article, grown under the same circumstances, on the land, will leave it in so favorable a condition for the next crop? we shall be told, doubtless, that the land suffers much more from evaporation during the cultivation of a crop of cotton, than under the culture of any other crop. To this we reply, that from experience and every year's observation at home, cotton grown on land rich and improving, will shade the land as early in the season as any cultivated crop.

In all this, for which we claim so much for the cotton plant as a fertilizer, there is nothing new—it is one of the inseparable conditions of its favorable and most profitable culture. Why is it, then, that this extremely valuable feature of the Cotton Plant has not been seen, been appreciated, and ere this enriched the country? Planters, in all this country, have cut down and cleared up rich and fertile lands, upon which they have grown cotton, producing from 1,500 to 2,000 lbs. of seed cotton per acre for a few years; and in 10, 12 to 15 years, they have abandoned them as unproductive—leaving the old fields and hill-sides worn out and waste! while the branches, ponds and lagoons without are filled and choked up with fertility. The studied policy of cotton growing in this country has been, and in many instances still is, a perfect system of land bleaching. The most elevated point in the field has been invariably selected as the place of beginning, and the rows directed *by line* to the branch or lowest part of the field, as though the Cotton Plant was hydrophobic!—that each fall of rain might hasten out of the field, laden with the humus of the soil. This rude picture—but too true—may provoke a smile, but if, with it, thought and reflection, we shall have well accomplished our object.

We shall be asked, doubtless, as we have been, often and again—"is it possible? Are there any means practicable, by which this wasting of soil, and despoiling of fields in the production of Cotton, may be remedied?" If our object were selfish altogether, we might truthfully answer yea—it is both possible and practicable entirely—and thus close the subject of inquiry. But we have a nobler object in view—a much higher duty to perform; and whilst we do say that it is possible and entirely practicable to grow cotton successfully, profitably and extensively, and improve the land whereon it is grown, in the performance of such plantation economy; we further assure our planting friends—and we do so from the field of operation, proof positive, practical and incontrovertible, because in our system of practice there is nothing hidden, mysterious or too difficult for the capacity of any man raising cotton, or the land he may cultivate, however rolling, sandy or calcareous—that in the adoption of a system of plantation economy, which tends to husband the resources of the land and improve its fertility, the quantity of cotton now grown upon any of our farms by hook or by crook, may be grown certainly upon one third the number of acres, the capacity of the land increased for the next crop, and a corresponding improvement made in the grain and hay crops, and, consequently, the stock of the farm.

It will be the fixed object of the *Cotton Planter* to demonstrate this important fact to its friends and readers—to prove and illustrate to the planter the very great advantages arising from a fixed system of rotation and shift of crops, without which a continued, certain productiveness is not to be expected from our lands.

To Make Indellible Ink.—Two drachms of caustic dissolved in two table spoonfulls of water, one tea spoonful of brandy, half a tea spoonfull of brown sugar; wet the cloth large enough for writing, with strong pearlash water, and dry with a hot, flat iron, then apply the writing, and dry with the same.

Plantation Economy.

No. 5.

Dr. N. B. Cloud, Dr. Sir: A remark of yours, on the 21st page of the *Cotton Planter*—"Why should we longer be satisfied to send off such immense quantities of raw cotton?"—brings to my mind, and to which I beg your attention, remarks made by me some ten years ago, that we should turn into twist, upon at least our largest plantations, all cotton ginned, by having attached to the gearing, additional machinery to spin. This was looked on as one of my theories, like unto my idea of raising our own swine and corn, some ten years or less prior to that date; or that advanced in 1842, that we in Mississippi ought to sell fruit to New Orleans and elsewhere. At this time, no man doubts either of the two last, as they are recorded facts. Any body, who will half try, can raise meat and corn; and two citizens of Mississippi, Gen. Felix Houston and Rev. Benj. Whitfield, who ought to be a General, if a soul as large as a meeting house makes one, have planted out (how many thousands, gentlemen?) of trees, and have sold (please say how much?) this year.

From having as deeply thought of the first, I am as fully persuaded that an American cotton planter will in ten years perhaps, send all his crop off in bales of thread. I am now among the old agricultural writers, and among those few who have devoted days and nights to the study, without the hope of fee or reward, and I must hold that the spirit of America must take hold on this idea.

I think twist is sent off and sold at 75 to 90 cents per package of 5 lbs. Take 80 cents at the average, which gives 16 cents per pound, and cotton at 8 cents gives only 100 per cent profit in round numbers. But admit the nett profit to be 20 per cent only, and we find the planter can make even more than that, as he pockets much cost and loss in transportation.

Permit me, just here, to call on my brother, L. A. Phillips, now engaged in manufactures, to state in your paper what the cost will be to manufacture a crop of 1,000 bales into twist of the best numbers; what amount of thread these 1,000 bales, weighing (including bagging and rope) 450,000 lbs., would make, cost of transportation to Philadelphia, cost of sales, and the amount it would sell for, cotton worth now, say an average of 9½ cents.

The planter can then easily find out what the extra machinery would be worth if attached to his steam engine. I make this public call on my brother, having confidence in his practical mind, that he can give as important information as can any man. Our father before us was a practical man, and I regard his youngest son as being a better "chip of the old block" than his elder brother.

Look at the difference. It will cost no more to ship to Europe or China 450 lbs. of thread, worth say 15 cents a pound, or $67 50, than a bale of cotton weighing 450 lbs., and worth, say at 8 cents, $36 00; and besides, not the loss by waste, and thus even enhancing the value by 10 per cent. And another very grand consideration is, that we could give employment to many young and old negroes much of the year, make less cotton, and thus, instead of all the vagaries of holding up prices, we would control, per force, the market of the world.

Some clever Arkwright, jr., will put his brains to work, and invent something by which we mediocre planters of one or two hundred bales can put up our cotton; and I hope soon, so that I may see it, and thank my Master that mine eyes have beholden such, ere I pass away. If any one do, he must present me with one, for I doubt of my ever being able to pay for it, being not like the Pennsylvania farmer—"live entirely within what I make"—for I eat all I make.

Yours, with hopes,

M. W. PHILLIPS.

Light Paste for Tarts and Cheese-Cakes.—Beat the white of an egg to a strong froth, then mix it with as much water as will make three quarters of a pound of flour in a very stiff paste, roll it very thin, then lay the third part of half a pound of butter upon it in little bits, dredge it with some flour left out at first, and roll it up tight. Roll it out again, and put the same proportion of butter, and so proceed until all be worked up.

WHAT MAY BE DONE ON A PRAIRE PLANTATION.

Dr. Cloud, Dear Sir: As you are aware, I am a stroug believer in the precepts and doctrines of holy writ, in which we are admonished to let "our light shine, and not put our candle under the bushel." Through the medium of your valuable agricultural journal, the *American Cotton Planter*, I hope I shall be afforded an opportunity of shedding a ray of light upon our rural economy. Talk of our husbandry and our general agricultural operations, and thereby create a spirit of emulation among our agricultural brethren.

As I have nothing to ask of the world, feeling assured that I am near the end of life's short journey; and, if I am not greatly deceived, my sole object now is to try to redeem lost time; for much of it has run to waste. Ah, could I live it over again, with the lights now before me, how different would it be spent! Its retrospective would not be a *sterile* waste, without an oasis to regale the eye, or for the memory to dwell on.

I should have been more than pleased to have had you on my prairie plantation last month, to have afforded you an opportunity, from occular demonstration, of alluding to my operations in your February number; this would probably have saved me the risk or hazard of being thought egotistical, or a disposition on my part to boast. As that is not my design or purpose, modesty will not cause me to withold the truth.

My only wish is, to show how easy it is for every farmer to raise his own meat, mules, hay, &c., by which policy we should soon be the most independent people in the Union. Had you been here before our slaughtering, you would have seen as fine hogs as Kentucky raises, many weighing over 300 pounds; and one and two and a half years old weighing 575 pounds. Many went over 300, and the last killing averaged over 200 pounds. You would have seen seven mule colts, two jacks and one jennette, equal, I suppose, to those of Kentucky or Tennessee. Also, a splendid lot of hay of our native grasses, through the spontaneous growth of our prolific soil; yet not inferior to Northern or Western grass, the latter it seems, from Tarlton & Whiting's *Circular*, is now worth in Mobile $1,80 per cwt. At those rates, the crab grass, well saved on my plantation, would bring more money than the corn and cotton together.

But not wishing further to trespass on your time and patience, I will close this hasty article, wishing your journal a wide circulation.

I remain yours truly,

N. B. POWELL.

Chunnenuggee, Ala.,
Jan. 24, 1853.

☞ Thorough preparation of land is absolutely necessary to the successful and luxurious growth of crops.

FENCING.

CANE BRAKE, March 10, 1853.

Dear Sir: Will you permit me to call attention, through the columns of your journal, to a subject of much interest to the cotton planters? I mean *fencing*. The law requires owners of improved lands to keep them fenced. Now, sir, I conceive it to be high time that this wretched policy was abolished, at least so far as the black lands of our State are concerned; and I am persuaded that it is called for by every consideration of thrift, improvement and economy.

The building and keeping up of fences around our plantations, entail one of the most expensive and troublesome items in the plantation economy. The cutting down the trees, mauling the rails, hauling them, and then putting them up, are each of them accompanied with a heavy and an expensive outlay of labor, for the building of this new indispensable fence around impoverished lands. But, in addition to this, a large proportion of land must be kept in woods, to meet the future and distant requirements of this odious law. Capital of great value, in the shape of timbered lands, must thus lie actually idle, annually wasting perhaps as much as the worth of the fence! and all this for what good? To keep off *stock*. Now, Mr. Editor, you are well aware that nothing breeds so much ill will, bad neighborhood and unfriendly feeling, as this same subject of fencing. Questions of boundary lines, of whose fence it is when discovered by some adjoining investigator to be on his land—disputes about whether equal portions are fairly kept up, and through whose part animals get in there—and a thousand other difficulties arise from this same requirement, to build fences to keep out stock. Now, is it not strange that this law has been permitted to remain so long unrepealed—at least as far as the black lands are concerned?

What is there, I would ask, in the nature of this property called live stock, which should make every other interest subordinate and subservient to it? The rule of the common law was and is, that you must so use your own as not to injure another. Why in the name of all that is reasonable, are stock exceptions? And why, instead of the owners being required to keep them from trespassing by fencing them in, is the cotton planter and corn planter required to fence them out? In the eye of the common law, every man's land is *fenced*, and every trespass is called a breaking of his close. A man may not walk across your line against your wishes, or he commits a trespass; but the miserable caricatures of cows and calves—the mere skeletons of what were intended for cattle—do not, by our law, break the close, unless, forsooth, they get through or over a fence five feet high and staked and ridered!

It is not unfrequently the case in our cane brake

that lane fences are kept up for miles and miles continuously, on each side of the road, where the annual value of fifty pannels would purchase all the unfortunate cows and hogs which seek a precarious subsistence in the locks of the fence, and for whose exclusion alone all this heavy and costly fencing has to be done!

The relative importance and magnitude of the two interests seem to leave no kind of question as the interest of which should be consulted—that of the planter or the stock owner, if they were opposed. But the planters themselves are the owners of the stock, and even the interest of this very stock requires that the law should be reformed. If it be an object to raise stock, our horses, mules, hogs, &c., when we have literally no range but the road, will they not fare much better to be enclosed and provided for than to thrust out on the short, unsatisfactory pickings in the fence locks? The most thrifty and successful in raising meat do it by means of keeping them enclosed and having grass lots.

Now, I am very far from presuming to prescribe and direct in what manner others shall conduct their matters, but I do not see why an interest which is the paramount one—the great interest of the cane brake—should be left at the mercy of this inconsiderable stock, which I must think are only permitted to rove because they are of little or no estimation in the eye of the owner. As the planting interest is by long odds the most considerable—at least in our cane brake country—the owner of stock should be required to fence them in, which he could do at *one hundredth part the cost and labor* it requires for the planter to fence them out. This would entirely dispense with the incalculable cost and labor of keeping up partition fences.

Yours, &c., A SUBSCRIBER.

FOR THE AMERICAN COTTON PLANTER.

Dr. N. B. Cloud, Dear Sir: In sending the first number of your excellent journal to my address, you did but anticipate my intended subscription to what gives abundant promise, I think, of being one of the very best agricultural papers published in the South; and for your kindness in doing this, I sincerely thank you.

There is an air of *practical* usefulness about the contents of the number before me that I like, and I have no doubt will address itself forcibly to the consideration of every intelligent planter. If anything *can* redeem the agricultural interests of the South from the state of passive prostration into which the misguided policy of the "one crop system" has thrown them, it is the multiplication and more general dissemination of just such papers as the *Southern Cultivator, Soil of the South* and the *American Cotton Planter*. Give us plenty of these, and the South will yet achieve her high destiny, and become what, by her soil and climate she so eminently deserves to be—the garden spot of the Union.

But I sat down merely to bid you God's speed in your praiseworthy undertaking—to enclose my mite of "material aid," and to ask you this question—

WILL PEAS KILL HOGS?

My own impression is, that *under certain circumstances, they will;* but as this opinion is founded only upon the experience of the last two years, I need more light upon the subject before coming to a satisfactory conclusion.

Two years ago, we planted but few peas in proportion to the number of hogs that were to eat them; the consequence was, that the fields were gleaned early and we lost no hogs. Last year, we planted eighty acres in peas, among common bottom—turned in 150 head of hogs early, and were well pleased with the result, till *after the first hard frost,* when a few of the hogs began to sicken and die, with what had every appearance of being inflammation of the bowels.

We lost perhaps twenty or twenty-five in all, and many more would have died, I presume, had we not promptly removed them from the fields and instituted the regular daily administration of antiphlogistic remedies to all such as manifested symptoms of the disease. We lost very few, if any, after this; but the convalescence of those already effected was tediously slow and protracted. Some of our neighbors were still more unfortunate than we.

From my limited experience, then, I am led to the following conclusions: First, that sound, healthy peas will not injure hogs, where they have unrestrained access to plenty of water, and are occasionally supplied with salt. Secondly, that *peas in a state of decay*, either from heavy frosts or long rains, *will kill hogs.* Third, that castor oil, in daily doses of one, two and three ounces, *with a slop diet,* will generally cure the disease, if taken in hand early. Fourthly, that peas are a profitable crop to the stock raiser, in spite of all the danger to be apprehended from their deleterious agency. Acting upon these conclusions, we shall plant about 100 acres in peas this season, but shall be careful to remove all stock from the fields immediately after the first hard frost, or long-continued rain, by which the vines and young pods are forced into premature decay.

Will you be so kind as to give us your views on the subject? With high respect, I remain

Yours truly,

H. A. SWASEY, M. D.

Poplar Hall, Yazoo County, Misss., Feb. 20, 1853.

☞ A very slight declivity suffices to give the running motion to water. Three inches per mile, in a smooth, straight channel, gives a velocity of about three miles an hour.

CALCAREOUS MANURE.

GREENSBORO, Feb. 23, 1853.

Dear Sir: As Calcareous Manures lie at the foundation of all agricultural success and improvement, I propose to present a few truths connected with them, which can hardly fail to interest, if not to benefit many of your readers.

Taylor's *Arator* and Skinner's *American Farmer*, published at an early period of the present century, were the first agricultural works which attracted the attention of the Southern planter, and awakened him to the necessity and advantages of improving his exhausted soil and unremunerating crops. In this way these writers accomplished much good at the time; but as they were not in advance of the science of their day, a defect attached to their system, calculated not only to lessen their benefits in many instances, but to produce serious evils in others. This consisted in their exclusive reliance on what was then called putrescent, but are now called organic manures, for the improvement of cultivated lands.

Edward Ruffin, Esq. the greatest living benefactor of his State, and who, in the memorable words of Swift, which were adopted by him as the motto of his periodical, *The Farmer's Register* "for having made five ears of corn grow where but one grew before, and red clover to take the place of poverty, grass and hopeless sterility, deserves better of mankind and has done more essential service to his country, than the whole race of politicians put together," was the first to demonstrate the important truth, that inorganic or mineral manures, and especially lime in some form, is an essential element of a good soil. His *Essay on Calcareous Manures* disclosed, among other new truths, the important one, "that no soil can be permanently improved beyond its original state of fertility, without the aid of calcareous manures." This new truth, brought to light some eight or ten years after the appearance of the *Arator* and *The American Farmer* convinced the deciples of Taylor and Skinner that they had been following imperfect guides, in the vain attempt to convert their silicious and poor soils into fertile farms, by means of almost unlimited applications of putrescent manures. It would not be extravagant to say, that in this way, millions of dollars worth of labor were misapplied and lost. From this truth, another corolary follows, which should be known by every one who has to buy or sell, or cultivate a farm—that where calcareous matter is not to be procured, land originally poor, though it be fresh and but little reduced by cultivation, will not compare in value with that which was originally good, but which may have been exhausted to the lowest point. With this brief historical digression, we now come more directly to our subject.

In the first place, we affirm that lime, in some of its combinations, is an indispensable element in every fertile soil. This is abundantly proved by the facts, that analysis shows that all soils, the least productive, and all valuable crops, contain more or less of lime. As a further proof, it has been tested that the most barren soils, such as the thin silicious and pipe clay lands of Eastern Virginia and the Carolinas, contain but little if any lime. If they have any, which their luxuriant growth of pine and other vegetables containing small portions of lime would iudicate, it is rendered latent by the strong grasp of acids, which refuse to release it to chemical analyses.

The next enquiry is, how does lime act upon soils in promoting their fertility?

It produces two effects upon sandy or clay soils—the one mechanical, the other chemical. By marling or liming a silicious soil, which, in its natural state, is too loose and porous to retain moisture, heat, or fertilizing gases, is made more close, cohesive and retentive, and is of course greatly benefitted. In soils of pure clay or approximating to it, and which are nearly impenetrable to air, moisture and manure, lime has the effect of destroying their too great cohesion, and making them friable, loose and mellow.

But the chemical influence of lime is more ameliorating than even its mechanical, great as the latter confessedly is. Carbonate of lime, or lime in its natural state, is saturated with carbonic acid gas; when mixed with the soil in this state, it comes in contact with other acids for which it has a stronger attraction than the carbonic which it has derived from the air, such as the humic, oxalic, sulphuric, &c., and readily yields its carbonic to form new combinations, such as the humate, oxalate and sulphate of lime. In this way it forms a new soil, first by developing nutriment for plants which was previously locked up, as well as by storing up permanently treas-

ure for the future growth of plants, which would otherwise prove evanescent. In addition to all this, lime has the property of destroying many pernicious minerals. By combining with the sulphuric acid of sulphate of iron, it forms plaster of Paris, a valuable manure, besides nullifying the poisonous character of the former mineral. It also developes fertilizing silicates from barren sandy soils, by producing disintegration. Believing that enough has been said to give the reader an accurate opinion of the mode in which lime acts upon soils, as well as to convince him that such action must be beneficial, the next enquiry will be, what is the best form of its application ?

Lime enters into combination with various acids, such as sulphuric, humic, carbonic, &c.; and these combinations take their names from the acids thus uniting, as humate of lime and carbonate of lime. But the most common forms in which it is used for improving lands are only the two of quick or burnt lime and carbonate of lime. Quick lime is lime decarbonated, or lime deprived of its carbonic acid gas by the action of heat. In this latter state, it is thought best in cold climates, or where it is to act on large masses of vegetable inert matter, or to develope silicates from a sandy soil, or to decompose noxious mineral substances, such as the sulphate of iron. But in warm climates such as ours, mild lime or carbonate of lime, the form in which it is found in all our prarie or rotton lime-stone, in shell banks and in marl beds, is the form in which it has been most beneficial, economical and convenient for use.

Our prarie lime-stone contains usually from sixty to eighty-five per cent of carbonate of lime, which is as rich as could be desired. After being dug up and exposed a few months to the action of air and moisture, either at the quarry or in the field, it pulverizes so as to be well prepared for spreading on the land.

What is called marl, no matter of what kind, is valuable for manuring chiefly for the carbonate of lime contained in it. This value, it is true, may be enhanced by the organic matter which is frequently connected with it, in the same manner that the value of a gold mine would be improved by the union of precious stones or other valuable adjuncts.

Lime is liberally used in every conntry which can boast of a prosperous and improving tillage. The bounty of the Creator has furnished it abundantly for all human uses, for it is estimated that carbonate of lime forms one eighth of the crust of our globe. To secure the chemical benefits of lime it is necessary also to furnish a suitable quantity of vegetable matter in some form, whether it be the growth of the land where it is spread, or furnished from the barn yard or woods. In making farm-yard manure, it will greatly improve and economize it to mix it freely with lime. Decomposition is thereby hastened, and the escaping gases are absorbed and stored up for the future food of plants.

The next, and final enquiry is, what is the proper quantity of lime to apply ?

This will depend so much upon the circumstances of each particular locality, that no definite and fixed rule can be given. Experience must be the guide, and there can be no difficulty, unless an over dose is given, which, however, is easily remidied by time or applications of clover crops, for clover has been found to do well in soils which are too calcareous for other crops.

Fertile soils have been found, upon analysis, to contain various proportions of lime—some two, some four, and others as high as sixteen, twenty and thirty per cent. Indeed, this proportion is by no means a sure index of the fertility, for the reason that a large supply of vegetable matter by its acids, may have neutralized much of the lime and concealed it from analysis, at the same time that it has enriched the soil by the formation of fertilizing salts.

Our best black prairie soils have been found to contain eight per cent of carbonate of lime. A specimen of the richest cane-brake soil contained sixteen per cent, and one from the Choctaw prairie, in Mississippi, thirteen per cent of carbonate of lime. Other fertile soils in the vicinity of the foregoing, and like them lying upon a limestone substratum, did not show any lime at all in the form of *carbonate*. From twenty to thirty per cent of carbonate of lime is not an unusual proportion in the best soils of France and England.

Mr. Ruffin found that no injury was even sustained by the application of 250 bushels of marl containing 4–10 of calcareous earth. As our lime stone contains about 8–10 of calcareous earth, I

will probably be most judicious to apply in the first instance about 125 bushels to the acre, and annually or biennially renew the doses, as observation may indicate. Experience both in this country and England, goes to prove that frequent and moderate applications are preferable to heavy doses with long intervals.

Professor Johnson says that in the county of Roxburg, in Scotland, where it is usual to lease and from nineteen to twenty-one years, the custom is to apply from 240 to 300 bushels of quick lime to the acre, at the beginning of the lease. The crops are found to improve by this dressing until the tenth year, when they reach their maximum, and then decline as gradually as they improved, until, at the end of the lease, they have reached their condition at the beginning, before they received the lime.

Upon the whole, there can be no doubt that the best general rule on the subject is, to give your land in the beginning as large a dose as it will bear without injury, and yearly afterwards apply as much as is taken away by the crops. From 5 to 10 bushels per acre, it appears from high authority, approximates to the annual waste.

It should not be forgotton that valuable, nay indispensable as lime or marl is to the improvement of our lands, to secure its full benefit, it must be connected with the manuring system and rotation of crops. All experience fully establishes this truth, and to expect any permanent improvement in our soils under the present scourging process of continuous and unvarying hoe crops of corn and cotton, were as idle as to expect that a patient with one of his leading veins open should increase in health and vigor., while his life's blood is permitted to flow out.

And in conclusion, let me say, that the time has already arrived for Alabama to commence this improved system of husbandry, unless she is resolved to go down to the lowest depth, where there is no lower deep of exhaustion. The sooner now the better. The more exhausted land is, the more costly and tedious is its renovation. To this complexion we must come at last—a change of our planting system, or unremunerating crops. Our individual, social prosperity, not less than that of our noble State, urges upon us the former alteration. The examples of some of our sister States are encouraging and wooing us. Mr. Ruffin says that since 1828, by marling and rotation of crops, in Eastern Virginia, (of which system he can proudly say, *magna pars fui, et auctor,*) individual estates have increased in value ten fold, and the assessed value of lands in that part of the State, while not more than one twentieth part of them has realized the benefits, has increased to the amount of thirty millions of dollars. And further, that when the benefits of this beneficent system shall have embraced one third or one half of this portion of Virginia, the increase in individual and public wealth will be estimated by hundreds of millions.

You, my dear sir, have embarked in the noble and patriotic enterprize of urging on the agriculturists of our State, this great, good work of an improved and improving husbandry, and that you may realize your highest visions, your most cherished hopes, is the sincere wish of

Your friend and ob't s'vt,

ISAAC CROOM.

Miscellaneous.

From the New York Tribune.

CHEMISTRY AND AGRICULTURE, WITH LIEBIG'S STATEMENT.

Prof. J. J. Mapes, in the forthcoming number of his *Working Farmer*, gives the following summing up of the great elemental truths of Agricultural Chemistry, which he introduces as follows: The following is from one of Liebig's familiar Letters on Chemistry, and is a synopsis of all the knowledge of the present day in relation to Agricultural chemistry, so much of which had its origin in the original writings of the great chemist.

He stands forth now the reviewer of himself, and gives us, in the most laconic manner, almost in adage-like form, the very rudiments of our knowledge, and this, too, posted up with all the improvements and observations of the day.

Let those writers who have *waddled* to and from his precepts, review their apostacy and be chastened for their want of consistency, by reading the following.

We present it to our readers as the best paper on Scientific Agriculture we have ever seen. We recommend that it be *studied by rote,* and that its truths form the basis of their after-investigation. We feel proud of belonging to a profession, the merits of which should call forth from so great a mind so great an effort. We hail it as a declaration of independence for Scientific Agriculture.

With modesty we would endorse it, and with a full acknowledgement of our inability to equal the great original, still we fearlessly throw the gauntlet to those who would wish to attack the doctrines contained in the following paper.

Let the calumniators of Liebig find in this, his maturest effort, aught that will not cause them to blush when they attempt to villify their greatest benefactor. We *beg* of our readers to study it line by line, and when they comprehend it all, with such clearness as we hope they may at a single careful reading, they will find that they have a grammar of their art, a foundation on which every observant agriculturist may build a rationale which will accord with practical truth; and despite the sophistry of those who would rob the great original of his due credit, this letter will live so long as language has a property to recommend it.

J. J. M.

LIEBIG'S SYNOPSIS.

In the immense yet unlimited expanse of the ocean, the animal and vegetable kingdom are mutually dependent upon, and successive to each other. The animals obtain their constituent elements from the plants, and restore them to the water in their original form, when they again serve as nourishment to a new generation of plants. The oxygen which marine animals withdraw in their respiration from the air, dissolved in sea-water, is returned to the water by the vital processes of sea-plants; the air is richer in oxygen than atmospheric air, containing 32 to 33 per cent; while the latter contains only 21 per cent. Oxygen, also, combines with the products of the putrefaction of dead animal bodies, changes their carbon into carbonic acid, their hydrogen into water, and their nitrogen assumes again the form of ammonia. Thus we observe in the ocean a circulation takes place without the addition or subtraction of any element, unlimited in duration, although limited in extent, inasmuch as in a confined space the nourishment of plants exists in a limited quantity. We well know that marine plants cannot derive a supply of humus for their nourishment through their roots. Look at the great sea-tang, the *fucus gigantius*. This plant, according to Cook, reaches a height of 360 feet, and a single specimen, with its immense ramifications, nourishes thousands of marine animals, yet its root is a small body, no larger than the fist. What nourishment can this draw from a naked rock, upon the surface of which there is no perceptible change? It is quite obvious that these plants require only a hold—a fastening to prevent a change of place—as a counterpoise to their specific gravity, which is less than that of the medium in which they float. That medium provides the necessary nourishment, and presents it to the surface of every part of the plant. Sea-water contains not only carbonic acid and ammonia, but the alkaline and earthy phosphates, and carbonates, required by these plants for their growth, and which we always find as constituents of their ashes.

All experience demonstrates that the conditions of the existence of marine plants are the same which are essential to terrestrial plants, but the latter do not live, like sea-plants, in a medium which contains all their elements, and surrounds with appropriate nourishment every part of their organs; on the contrary, they require two media, of which one, namely the soil, contains those essential elements which are absent from the medium surrounding them, that is, the atmosphere. Is it possible that we could ever be in doubt respecting the office which the soil and its component parts subserve in the existence and growth of vegetables? that there should have been a time when the mineral elements of plants were not regarded as absolutely essential to their vitality. Has not the same circulation been observed on the surface of the earth which we have just contemplated in the ocean, the same incessant change, disturbance and restitution of equilibriums? Experience in agriculture shows that the production of vegetables on a certain surface increases with the supply of certain matters, originally parts of the soil, which had been taken up from it by plants —the excrement of man and animals. These are nothing more than matters derived from vegetable food, which, in the vital processes of animals, or after their death, assume again the form under which they originally existed as parts of the soil.

Now, we know that the atmosphere contains none of these substances, and therefore can replace none; and we know that their removal from a soil destroys its fertility, which may be restored and increased by a new supply. Is it possible, after so many decisive investigations into the origin of the elements of animals and vegetables, the use of alkalies, of lime and the phosphates, any doubt can exist as to the principles upon which a rational agriculture depends? Can the art of agriculture be based upon anything but the restitution of a disturbed equilibrium? Can it be imagined that any country, however rich and fertile, with a flourishing commerce, which, for centuries, exports its produce in the shape of grain and cattle, will maintain its fertility, if the same commerce does not restore, in some form of manure, those elements which have been removed from the soil, and which cannot be replaced by the atmosphere? Must not the same fate await every country which has actually befallen the once prolific soil of Virginia, now in many parts no longer able to grow its former staple productions, wheat and tobacco? In the large towns of England, the produce both of English and foreign agriculture is largely consumed; elements of the soil indispensable to plants do not return to the fields; contrivances resulting from the manners and the customs of the English people, and peculiar to them, render it difficult, per-

haps impossible, to collect the enormous quantity of phosphates, which are daily, as solid and liquid excrements, carried into the rivers.

These phosphates, although present in the soil in the smallest quantity, are its most important mineral constituents. It was observed that many English fields, exhausted in that manner, immediately doubled their products, as if by miracle, when dressed with bone earth imported from the continent. But if the export of bones from Germany is continued to the extent it has hitherto reached, the soil must be gradually exhausted, and the extent of our loss may be very easily estimated by considering that one pound of bones contains as much phosphoric acid as a hundred pounds of grain. The imperfect knowledge of nature, and the properties and relations of matter possessed by the alchemists, gave rise in their time to an opinion that metals as well as plants could be produced from a *seed*. The regular forms and rammifications seen in chrystals, they imagined to be the leaves and branches of plants; and as they saw the seeds of plants grow, producing root, stem and leaves, and again blossoms, fruit and seed, apparently without recovering any supply of appropriate material, they deemed it worthy of jealous enquiry to discover the *seed* of gold, and the earth necessary for its developement. If the metal seeds were once obtained, might they not entertain hopes of their growth? Such ideas could only be entertained when nothing was known of the atmosphere, and its participation with the earth in administering to the vital processes of plants and animals.

Modern Chemistry, indeed, produces the elements of water, and, combining them, forms water anew, but it does not *create* those elements—it derives them from water; the new-formed, artificial water has been water before. Many of our farmers are like the alchemists of old; they are searching for the miraculous seed—the means which, without any further supply of nourishment to a soil scarcely rich enough to be sprinkled with indiginous plants, shall produce crops of grain a hundred fold. The experience of centuries, nay, thousands of years, is insufficient to guard men against these fallacies; our only security from these and similar absurdities must be derived from a correct knowledge of scientific principles. In the first period of natural philosophy, organic life was supposed to be derived from water only; but we now know that other elements must be supplied by the earth, if plants are to thrive and multiply. The amount of materials contained in the atmosphere, suited to the nourishment of plants, is limited; but it must be abundantly sufficient to cover the whole surface of the earth with a rich vegetation. Under the tropics, and in those parts of our globe where the most genial conditions of fertility exist—a suitable soil, a moist atmosphere and a high temperature—vegetation is scarcely limited by space; and where the soil is wanting, it is gradually supplied by the decaying leaves, bark and the branches of plants. It is evident that there is no deficiency of atmospheric nourishment for plants in those regions, nor are these wanting in our own cultivated fields; all that the plants require for their developement is conveyed to them through the incessant motion of the atmosphere.

The air between the tropics contains no more than that of the arctic zones; and yet how different is the amount of produce of an equal surface of land in the two situations! This is easily explained. All the plants of tropical climates, the old and wax palms, the sugar-cane, &c., contain only a small quantity of the elements of the blood necessary to the nutrition of animals, as compared with our cultivated plants. The tubers of the potato in Chili, its native country, where the plant resembles a shrub, if collected from an acre of land would scarcely suffice to maintain an Irish family for a single day. The result of cultivation in those plants which serve as food, is to produce in them those constituents of the blood. In the absence of the elements essential to these in the soil, starch, sugar and woody fibre are perhaps formed; but no vegetable fibrine, albumen or caseine. If we intend to produce, on a given surface of soil, more of these latter matters than the plant can obtain from the atmosphere, or receive from the soil of the same surface in its normal and uncultivated state, must create an artificial atmosphere, and add the we needed elements to the soil. The nourishment which must be supplied in a given time to different plants, in order to admit a free and unimpeded growth, is very unequal. On pure sand, on calcareous soil, on naked rocks, only a few genera of plants prosper, and these are for the most part perennial plants. They require for their slow growth only such minute quantities of mineral substances as the soil can furnish, which may be totally barren for other species.

Annual, and especially summer plants, grow and attain their perfection in a comparatively short time; they therefore do not prosper on a soil which is poor in those mineral substances necessary to their developement. To obtain a maximum in height in the short period of their existence, the nourishment contained in the atmosphere is not sufficient. If the end of cultivation is to be obtained, we must create in the soil an artificial atmosphere of carbonic acid and ammonia; and this surplus of nourishment, which the leaves cannot appropriate from the air, must be taken up by the corresponding organs, that is, the roots, from the soil. But the ammonia, together with the carbonic acid, are alone insufficient to become part of a plant destined to the nourishment of animals. In the absence of the alkalies, the phosphate and other earthy salts, no vegetable fibrine—no vegetable caseine can be formed. The phosphoric acid of the phosphate of lime, indispensable to the ceralia and other vegetables in the formation of their seed,

is separated as an excrement in great quantities, by the rine and bark of ligneous plants. How different are the evergreen plants, the oleaginous plants, the mosses, the ferns and the pines, from our annual grasses, the ceralia and the leguminous vegetables! The former, at every time of day during winter and summer, obtain carbon through their leaves, by absorbing carbonic acid, which is not furnished by the barren soil on which they grow; water is also absorbed and retained by their coriaceous or fleshy leaves with great force. They lose very little by evaporation, compared with other plants.

On the other hand, how very small is the quantity of mineral substances which they withdraw from the soil during their almost constant growth in one year, in comparison with the quantity which one crop of wheat of equal weight receives in three months? It is by means of moisture that plants receive the necessary alkalies and salts from the soil. In dry summers a phenomenon is observed, which, when the importance of mineral elements to the life of a plant was unknown, could not be explained. The leaves of plants first developed and perfected, and therefore nearear the surface of the soil, shrivel up and become yellow, lose their vitality and fall off while the plant is in an active state of growth, without any visible cause. This phenomenon is not seen in moist years, nor in evergreen plants, and but rarely in plants which have long and deep roots, nor is it seen in perennials in autumn and winter. The cause of this premature decay is now obvious. The perfectly developed leaves absorb continually carbonic acid and ammonia from the atmosphere, which are converted into elements of new leaves, buds and shoots; but this metamorphosis cannot be effected without the aid of the alkalies and other mineral substances. If the soil is moist, the latter are continually supplied to an adequate amount, and the plant retains its lively green color; but if this supply ceases from a want of moisture to dissolve the mineral elements, a separation takes place in the plant itself. The mineral constituents of the juice are withdrawn from the leaves already formed, and are used for the formation of the young shoots; and as soon as the seeds are developed, the vitality of the leaves completely ceases. These withered leaves contain only minute traces of soluble salts, while the buds and shoots are very rich in them.

On the other hand, it has been observed that where a soil is too highly impregnated with soluble saline materials, these are separated upon the surface of the leaves. This happens to culinary vegetables especially, whose leaves become covered with a white crust. In consequence of these exudations, the plant sickens, its organic activity decreases, its growth is disturbed; and if this state continue long, the plant dies. This is most frequently seen in foliaceous plants, the large surfaces of which evaporate considerable quantities of water. Carrots, pumpkins, peas, &c., are frequently thus diseased, when, after dry weather, the plant being near its full growth, the soil is moistened by short showers, followed again by dry weathere The rapid evaporation carries off the water absorbed by the root, and thus leaves the salts in the plants in a far greater quantity than it can assimilate. These salts effloresce upon the surface of the leaves, and, if they are herbaceous and juicy, produce an effect upon them as if they had been watered with a solution containing a greater quantity of salts than their organism can bear. Of two plants of the same species, this disease befalls that which is nearest its perfection; if one should have been planted later, or be more backward in its development, the same external cause which destroys the one will contribute to the growth of the other.

From the Horticulturist.

TREATMENT OF WOODS,

BY WM. H. SCOTT, ADRIAN, MICH.

No branch of agricultural industry is of greater importance than the forest in all its appliances. In most of the States the question now is not how the woodlands shall be most speedily cleared of the trees, but by what management shall the necessary calls for wood in its different uses be most economically answered, with the smallest inroad upon the standing timber? Even in our new States, a good "wood lot" is often considered the most valuable on the farm.

Two questions are involved in the preservation of these forests: How may the uses of building material and fuel be economized? How far may the products of the soil be increased and improved in quality, by proper management?

With the greatly improved methods of generating heat for domestic and manufacturing uses, not more than half the amount of fuel is required now that was consumed ten years ago. Iron and glass are fast gaining ground where strength is more needed than bulk, and where durability is an important consideration.

I do not wish to discuss the economies of wood after it has been taken from the forest. How much and what quality of wood may be taken from woodland, consistent with the least deterioration of the permanent value of the forest, is a question that more immediately concerns the land owner. The oak is the most valuable of all our woods. It is the most generally diffused, and is put to the

greatest number of good uses. It is well known that the most valuable timber is that which has attained its growth with most light and air. The wagon-maker takes care to combine toughness and durability, by selecting his timber from trees of "second growth," or from trees of first growth that from infancy have stood alone or far apart. Acting on this hint, we would cull out first such of the oaks as are unsound, giving those that are left more light and air. It is a fact in vegetable physiology, that motion facilitates circulation, and that young trees confined to stakes do not form their bodies so rapidly as when left to the moving influences of the breeze. The thinning should be carefully effected too; for the sudden exposure of the body of a tree to the light, after it has been shielded for centuries from the rays of the sun, is frequently fatal to it. The growth of a tree that has always been closely hemmed in and guarded by its fellows, has a form so different from one of the same species that has sprung up and come to maturity in the open ground, that the identity would scarcely be recognized. Thus, the black walnut in the forest, is a tall, fine-looking and naked shaft, with often but a few short branches at its top; while in the open field it grows low, round and spreading. I have often recommended the whitewood for the avenue, or as a very fit tree for private grounds, and have almost as often been asked if that tall, naked tree, out of which so much lumber is made, could be beautiful. Here let me say that the very general ignorance which exists of the difference of pent up forest trees and those that have had full exposure, is the great reason why ornamental trees for transplanting are so seldom chosen from many of the more common forest varieties. How often does the woodman's axe itch for contact with the tall, naked column of the white ash, whose tempting softness is destined to be until he shall have disposed of some harder but less valuable tree. As a lawn tree, that white ash becomes short and round, close and symmetrical.

The experiments of hundreds, in attempts to develope the sylvan beauties of wildwood, have failed from sudden and indiscriminate thining. I have seen the fruits of it on my own ground. A narrow belt of forest, composed of oak, linden, hickory and elm, was left a few years ago on the front of a sloping field. Noble old oaks some of them were while-standing in the thick forest. I have hoped that exposure to the light would force them to throw out branches from their naked bodies, and that some of these days a pretty grove would be the result, as many more sound trees of a younger growth were left as body guards to shield their stems. These younger have done their duty well; but the old ones struggle on from year to year, and refuse to be comforted by the youthful family around them. Some of them have thrown out a few weakly branches, but as many more look as if beginning to decay. I shall, after all, look to the second growth for my permanent and most beautiful shades. The difficulty in my case was that the wood was too suddenly thinned. Two-thirds of the large trees had been cut out of the belt nearly at once, judging from the appearance of the stumps, and *all* the trees on either side.

Owners of wood lots do not attach sufficient importance to the nut-bearing trees. It will not be very many years before the hickory, black-walnut and chestnut will have become so scarce as to possess a value, for the fruit they might produce, quite exceeding that of most orchard trees. But a small portion of the hickory trees in forests where this is the prevailing tree, bear well, if at all. The good bearers should be saved and cherished. There is so much difference, too, in the quality of the nuts—nearly as much as in the fruit of a seedling apple orchard—that great care should be taken in selecting the trees to be spared the axe. Some claim to be able to judge of the character of the nut by the number of leaflets in a leaf. I do not know how far this test may be relied on.

In forest labor, there is quite too little attention paid to the fact that some trees are impatient of removal, and that such should be cherished on their natal soil. The hickory, for instance, is very difficult to transplant. Indeed, I do not recollect ever to have seen one of the common size for street planting, live long after removal. We should act upon the hint, and encourage it to give us the greatest possible beauty in the place where it germinated. Few of our Western farmers realize that they have been guilty of any great barbarity when they have "cleared" their last field without having left a hickory upon the farm. With this tree, utility and beauty go so hand in hand, that such wanton destruction is quite inexcusable. For

beauty and thrift, there are few round-headed trees equalling the hickory.

Thorough draining will much improve a forest, not only in the increased growth of the trees, but in the greater comfort of getting about in it. All, or nearly all woods are closer and firmer on a dry than on a wet soil. Often the vegetable matter that forest ditches afford would pay very well for the trouble of cutting them; and it will generally be found that these drains will effect quite as favorable a change in the forest crop as in the field crop, though their influence would not be perceived so immediately.

It is becoming an object in the older States to *make* forests for timber. On sandy soils, and such as compose the western prairies, the locust grows so rapidly that it soon arrives at a size profitable for many uses. On a moderately rich, sandy soil, the yellow or seed locust, if not sown too thick, is large enough at eight years old to make good fence posts, and would do very well for the rails of a post and rail fence. The sprouting propensity of this tree precludes all necessity of replanting. The character of the locust for durability is such that, if possible to get, it would be very generally used for railroad ties. A prairie or New England farmer could hardly make a surer provision for his children, than to make a locust plantation of a portion of the land he holds in reserve for them.

Now, Mr. Editor, these thoughts are intended more as suggestive of a great deal that should be said on forest culture, than for any intrinsic value of their own; and I hope they may be the means of calling out more familiar pens.

CIRCULAR.

Dr. Cloud, Dear Sir: At a meeting called by the Executive Committee of the "Southern Central Agricultural Association, held in Macon, Ga., on the 21st of October, 1852, attended by a large number of the State Society of Georgia, and by delegates from Virginia, South Carolina, Alabama, Mississippi, Florida, Tennessee and Louisiana, the following resolutions were adopted:

Resolved, That the members of the Agricultural Association of the Slave-holding States, to be organized as hereinafter recommended, be composed of such citizens of the same, as taking an interest in Agriculture, desire to become members thereof; and of delegates from State and Local Agricultural Societies, and from States or parts of States.

Resolved, That such persons as above designated, are recommended to convene at Montgomery, Alabama, on the first Monday in May next, and to organize an Agricultural Association of the Slave-holding States, under such provisions as to them may appear best calculated to fulfill the purposes of their organization, which shall hold its meetings in succession in all the Slave-holding States that may participate in the Association.

Resolved, That a Committee of Correspondence, consisting of seven, be appointed, to carry into effect the foregoing resolutions.

Acting under the third resolution, the undersigned respectfully beg your attention, and solicit your co-operation and influence in promoting the great and important interests involved in the subjects which will engage the attention of the contemplated assemblage in Montgomery.

To us it is manifest that great advantages may reasonably be expected to result from periodical meetings of persons, or representatives of persons, cultivating the soil of the South and West, having a common interest in the Institutions, Productions, Commerce, Manufactures and Education of the Planting States.

The chief objects of such an Association would be, it is presumed—

To improve our own agriculture, yielding peculiar productions through the agency of a normal labor, requiring distinct economy, and dependent on a climate of its own.

To develope the resources and unite and combine the energies of the Slave-holding States, so as to increase their wealth, power and dignity, as members of this Confederacy.

To enlist and foster those scientific pursuits which reveal to us the elements and character of our soil, instruct us in the presence of those magazines of fertilizers which nature has with so bountiful and considerate a hand provided for the uses of the industrious and the enterprizing; and search out the histories and the habits of the insect tribes which destroy, it is believed, annually a fifth of our crops, and supply us with a knowledge of them which may enable us to guard against their future ravages.

To promote the mechanic arts directly and indirectly auxiliary to agriculture, and by a generous confidence and liberal patronage raise those engaged in them to a social position always the just reward of intelligence, industry and good conduct.

To direct, as far as may be done, public sentiment against the barriers which have been artfully raised to cut off our commercial intercourse with distant countries, save through such outlets as are supplied by Northern marts, exacting tribute upon what we produce and consume.

To exert an influence in establishing a system of common school instruction which will make

Christians as well as scholars of our children; which, in arming the rising generation with the instruments of knowledge, will instruct them also in their proper uses; impressing upon them, from first to last, that, especially under our form of government, private worth constitutes the agregate of public good, and that no one can disregard his duties to those around him, without positive injury to himself.

These constitute the main purposes for which we appeal to the individual and aggregate interests of the Slave-holding States to meet us in an Agricultural Convention, in Montgomery, on the 1st Monday in May next. Your attendance is respectfully and earnestly requested.

W. C. DANIEL, DeKalb County,
GEO. R. GILMER, Lexington,
THOMAS STOCKS, Greensboro,
J. HAMILTON COUPER, Darien,
JAMES M. CHAMBERS, Columbus,
ASBURY HULL, Athens,
JOHN P. KING, Augusta.

CONTRAST IN FARMING.—In a recent conversation with Rev. Mr. Nash, of Amherst College, whom our readers may recolect as the author of an excellent article on wheat-growing in New-England, he stated to us that some of his neighbors grow corn at a clear profit of fifty dollars an acre: while within the same town there are others who do not get enough to pay the fair cost of cultivation. For instance, one farmer plowed in thirty loads of coarse stable manure upon a light sandy soil, and made 46 bushels of corn. The next year he repeated the same process with the same result. This manure, at current prices, was worth more than the crop. The error was in using the wrong kind of manure for such a soil.—What should have been used? Upon the same farm and convenient to the ground planted, there is a large bed of peat. If this had been composted with stable manure in the proportion of one load of manure to three of peat, with a sprinkle of salt and lime, it would have made a manure worth more than that from the barn yard.

BARON LIEBIG, the distinguished chemist, says, that as much flour or meal as can lie on the point of a table knife is more nutrious than five measures, or about eight or ten quarts of the Bavarian beer; and that a person who daily consumes that amount of beer, obtains from it in a year the amount of nutriment which there is in a five pound loaf of bread, or in three pounds of filesh.

Contents of this Number.

The History of Cotton Manufactures.....97
Preparation and use of Manures.....100
Agricultural Education.....102
Marl and Marling.....105
Excretion of Plants.....108
Clover in the South.....110
Cold Cream for Sore Lips.....111
Remedy for Burns.....111
White Cup Cake.....111
Cocoa Cakes.....111
Corn Bread.....111
Alkaline washes for the Surface of Trees.....112
Domestic Recipes.....112
Agents and Notices Editorial.....113
Our New Dress.....113
Agricultural Association.....114
Horticultural Fair.....114
Important Enquiries.....115
Cotton, its Improved and True Culture.....115
Recipe for Indelible Ink.....116

PLANTATION ECONOMY.

Number 4.....117
What may be done on a Prairie Plantation.....118
Fencing.....118
Will Peas Kill Hogs.....119
Calcareous Manure.....120

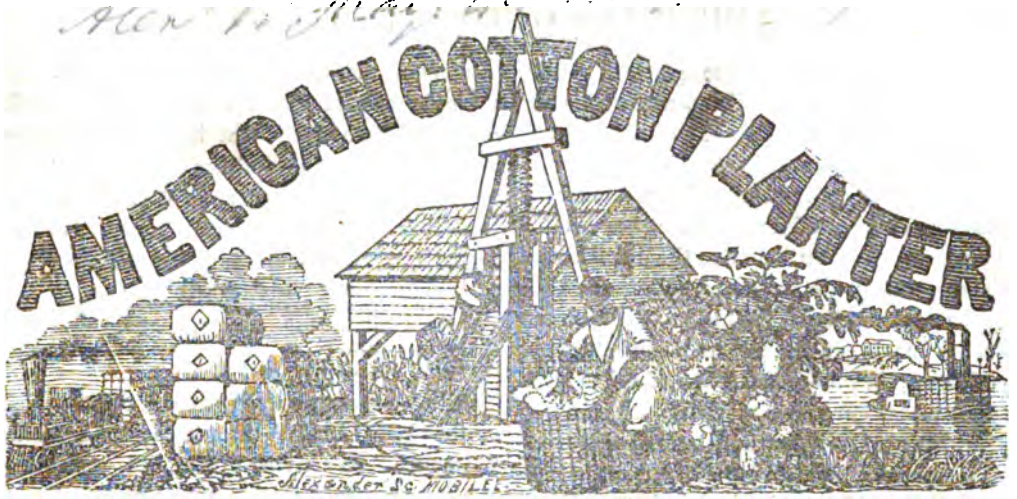
MISCELLANEOUS.

Chemistry, Agriculture, Statement by Liebig.....122
Treatment of Woods.....125
Circular of the Committe of the Agrl. Congress....125
Contrast in Farming.....128

J. A. & S. S. VIRGIN,
MACON, GA., AND MONTGOMERY, ALA.,
DEALERS IN
PIANOS, HARPS,
GUITARS, STRINGS,
Sheet Music,
AND A
VARIETY OF MUSICAL MERCHANDISE,
GOLD AND SILVER WATCHES,
JEWELRY, SILVER AND PLATED WARE,
AND FANCY ARTICLES.
N. B.—Watches, Clocks, and Jewelry repaired in the best manner.
April 1, 1853-6t

GEORGE G. HENRY,
COMMISSION MERCHANT,
MOBILE, ALABAMA.
Mobile, September 1st, 1852.

ALABAMA JOURNAL JOB OFFICE, PRINT.



A Monthly Journal, devoted to improved Plantation Economy, Manufactures, and Mechanic Arts.

Vol. I. MONTGOMERY, MAY, 1853. No. 5.

From Debow's Review.

History of Cotton Manufactures.

[*Concluded.*]

Of the present actual condition of the cotton manufacture in this country, we cannot speak with entire certainty, until the returns of the census, for 1850, are published. We are deficient in details, but for the figures given above, derived chiefly from a work on American cotton manufactures, by Robt. H. Baird, 1851, we can speak with confidence.

Of the 2,5000,000 cotton spindles now in the United States, 150,000 are in the Southern states, and 100,000 in the Western. A committee of the Manufacturers' Convention, held last year at Richmond, Va., stated, in their report, that there were 20 companies engaged in the manufacture of cotton in that state, with an aggregate capital of $1,800,000. These companies run, when in full operation, 54,000 spindles, producing no yarn, however, finer than No. 20. For some time past, these Virginia mills have had in full operation 22,000 spindles, at a reduction of 25 per cent on the wages; 7,000 spindles three-fourths of the time, and 8,000 one-third of the time. The remainder of the factories are entirely, or partially, stopped.* In Maryland, affairs are not much better than in Virginia. "Out of 28 mills in that state," says Mr. Baird, "only two are constantly employed; 18 work a part of the time, and eight are entirely idle. The total average product is less than half the capacity of the mills. In Rhode Island, too, we learn from a writer in the Scientific American, for Dec. 7, 1850, some 70, out of the 130 cotton mills in that state, have stopped.

These suspensions and depressions of our cotton manufacturing operations are undoubtedly attributable to the following causes combined:

1. Our present low tariff.
2. The high price of cotton; and
3. Our manufacturing too much coarse goods.

Which of these causes is the most potent, we leave our readers to decide. The first we cannot discuss without being drawn into the field of politics. The second affects manufactures by turning capital into other channels; and the third by overstocking the markets with coarse goods, and leaving our citizens dependent on other countries for fine ones. If we would keep the fine goods of other countries out of our markets, we must manufacture that description of goods at home.—Nothing but an absolute prohibition of the fine cotton fabrics of other countries would keep them out of our markets, if we did not manufacture them ourselves. If our manufacturers do not supply the demand for fine fabrics, they must and will come from abroad. The real coarse cottons, and our manufacturers make scarcely anything else but coarse; and the consequence is, that the present supply of coarse fabrics is greater than

*Baird's Cotton Spinner, p. 25.

the demand—the markets are glutted. Mills, then, are obliged to stop. We consider this the chief cause of the failures. The other causes mentioned have their weight.

The process of calico printing by machinery is the last invention, and the crowning one, in the manufacture of cotton. Before the introduction of calico printing, the cotton manufacture in the United States was considered to be too precarious to justify one in an attempt to manufacture the finer fabrics; but the introduction of calico printing has placed our cotton manufactures on a permanent basis. Our consumption of domestic calicoes is immense, and all our coarser cotton fabrics have the preference in the markets of South America, China, Siam, the East Indies, and elsewhere, on account of their being superior in durability to those of France and England.

The comparative idleness of our cotton factories is to be deplored; but the general government cannot justly be charged with the present state of things, and it is at least questionable whether the evils complained of can be removed by legislation. To succeed, it is evident that our cotton factories must manufacture those fabrics most in demand. If, after glutting the markets with coarse fabrics, they still continue to manufacture them, they must expect to fail, and no legislation could help them. Undoubtedly a higher tariff would help them some, but it would not obviate the necessity of manufacturers adapting their fabrics to the demand and supply of various markets.

Our cotton Manufacturers are at present much affected by the importations of foreign cottons.—The value of cotton goods imported into this country, after deducting the amount re-exported, was, in

1844.....	$13,286,880	1848.....	$17,205,417
1845.....	13,360,729	1849.....	15,182,518
1846.....	12,857,422	1850.....	19,685,986

During the year 1850, the value of the cotton goods exported from this country was $4,734,424.

It is a curious fact in the history of the agricultural products of the earth, that cotton, which now yields to this country a profit of from $30 to $40,000,000 annually, was almost a worthless plant only sixty-six years ago. Mr. T. Coxe, a writer in Rees' Encyclopædia, says, that in 1786 cotton was only seen growing in gardens in this country. Cotton crops and cotton planters, at that time, were quite unknown. Not a single bale of cotton was exported from this country before 1787, that is, of this country's growth. We find in Smither's History of Liverpool, pages 129, 153, an account of the first exportations of cotton from this country, as follows:

1770.....8 bales from New-York.
" .....4 bags from Virginia.
" .....8 barrels from North-Carolina.
1784.....8 bales from "America."
1785.....5 " " "
1786.....6 " " "

All of this cotton was from the Spanish Main, or the West Indies. The eight bales marked "America," on arriving in England, were seized, it being presumed that so large a quantity of cotton could not come from America. It would seem that as late as 1794, Mr. Jay, when making the treaty with England at that time, was not aware that any cotton, was exported from the United States.* The first export of our own cotton, according to M'Culloch, was in 1790. It was in small packages, called "pockets."

The prices of cotton at first were very high.—In England, in 1789, it was 22 pence per pound. In America it was as follows:

1790.....	14½ cts.	1796.....	36½ cts.	1802.....	19 cts.
1791.....	26 "	1797.....	34 "	1803.....	19 "
1792.....	29 "	1798.....	39 "	1804.....	20 "
1793.....	32 "	1799.....	44 "	1805.....	25 "
1794.....	38 "	1800.....	28 "	1806.....	22 "
1795.....	36½ "	1801.....	44 "	1807.....	21½ "

From 1807 cotton declined until 1814, when it was 15 cents; 1815, 21; 1816, 29½; 1818, 34. It then declined to 15 cents in 1824, and in 1825 rose to 21 cents. It then declined to 9½ cents in 1827, and was not over 10½ until 1833, when it became 11; 1834, 13; and in 1835, 16½.

The United States export more raw cotton than all the rest of the world. For the last five years our exports have been as follows:

1846.....	$42,787,341
1847.....	53,415,848
1848.....	61,898,294
1849.....	66,596,887
1850.....	71,984,616
1851.....	over 100,000,000†

Europe paid the United States, in 1850, the enormous sum of $71,984,616, besides what she paid to other cotton-growing nations. Our home consumption is, at present, 539,000 bales; that of

* Letter of the Secretary of the Treasury, Doc. No. 146, p. 33.

† We have not yet the Secretary's return—shall hereafter give it.

England, 1,472,000; that of France, 863,000.—All the rest of Europe together consume about as much as France. England, therefore, uses up more than one-half of all the cotton raised on the earth; but all the people of Great Britain and her dependencies do not use as many manufactured cotton goods as the people of the United States. Our home consumption exceeds that of all Europe.

A. W. ELY.

Marl and Marling.

SILVER BLUFF, So., CA.

[*Continued.*]

Silica, on the contrary, enters largely into the formation of the plant. It has, as I have mentioned, acid properties, and combines with the alkalies and alkaline earths and metals, forming salts of the greatest value in numerous points of view, which are called silicates. It is the silicate of potash, sometimes replaced by that of soda, and to some extent that of lime, which forms the outer coating of straw, stems, stalks, &c., giving both strength and protection to the plant. These silicates are insoluble in water, so much so that they constitute the chief ingredient of rocks. But that universal and inexhaustible agent, the carbonic acid of the atmosphere, acting on the alkaline basis of the silicates, decomposes them: hence the gradual breaking down of rocks under atmospheric influence. The presence of lime is also known to influence the decomposition of the silicates of potash and soda, and at the moment of decomposition, both the silica and alkali are soluble. Thus, lime aids materially in supplying these essential elements to plants. Whether it does so by its alkaline properties, or by concentrating carbonic acid, or merely by its catalytic power, has not been settled. The silicate of lime itself, when rendered soluble by the decomposing influence of carbonic acid, sometimes, as I have stated, becomes, in their absence, a substitute for the silicates of potash and soda. It is this combinatiod also, that renders light sandy lands more consistent, which is one of the most important effects of lime on such lands—particularly on the light uplands so extensively planted on this side of the Savannah, and in your county. The fact is Unquestionable. It is usually referred, as is the opening of stiff lands, to the mechanical influence of the lime, but the cause assigned here, as in that case, is not adequate to the effect.

The red and brown lands in your county are colored, as they are every where else, by iron.—You have no doubt observed that, after continued cultivation, some of the best of them cease to become productive without much apparent loss of vegetable mould, and are not rapidly restored either by rest or manure. Among other causes, this is owing, to a considerable extent, to the excessive oxidation of the iron in consequence of its exposeure, from plowing, to the atmosphere, whence it extracts oxygen, a process you see constantly exemplified by the rusting of old iron. It becomes what is called a peroxide of iron, which is very injurious to vegetation. Lime neutralizes all acids, and if put upon these lands in proper quantities, it will neutralize a portion of the acid in the iron, and convert the peroxide into a protoxide of iron, which, if not actually beneficial, is a least harmless to plants. You have too, in some of your soils, the sulphuret of iron, so often taken for gold ore. This, on exposure to the air, absorbs oxygen, which produces sulphuric acid; and then forms the sulphate of iron or copperas, which is poisenous to plants, If lime is put on the land it will arrest the accession of the sulphuric acid, thus formed, to the iron, and prevent the formation of copperas. But what is more, combining with the sulphuric acid itself, it forms sulphate of lime, commonly called plaster of paris, one of the most highly prized of all mineral manures, and an element in all, or nearly all plants. Lime has also the power of forming plaster in the same way when it comes in contact with sulphate of silicon, which is supposed to exist in all soils. It combines also with sulphuric acid, arising from vegetable decomposition or any other source, and produces this valuable salt.

The sulphate of lime, called also gypsum, as well as plaster of paris, must exist to some extent in all soils, as it is found in almost all plants.—But, like the carbonate of lime, it is seldom to be detected by chemical tests. It may also be eliminated from unknown combinations by the vital action of the growing plant. But in the way I have mentioned, it will undoubtedly be formed in greater abundance in all soils, by the application of lime. Sulphuric acid itself is often used as a ma-

nure, but experience has fully established the fact, that it is of little value except on calcareous soils; and what is more remarkable, that sulphate of lime will also act with far greater effect on limed land. I rolled the cotton seed in it, previously to planting them, and thus applied it at the rate of only one peck of the plaster per acre. I am satisfied that the product, on the few acres to which it was applied, was one third greater than on similar adjoinidg land, marled also, but not plastered. I anticipate, therefore, the greatest benefit from the use of plaster after marl. I should remark, however, that it has not been found invariably beneficial even on limed lands. In England, and on our coast, south of Long Island, little advantage has been derived from it. Two probable causes have been assigned for this: the influence of sea air, which has not been satisfactorily explained, and the probability that the lands in the regions mentioned have derived a sufficiency of gypsum already from the sulphuret of iron, or other sources. Very little is required for plants: one peck per acre applied to the moistened seed will probably have as much effect, for one year at least, as any other quantity. In the last dry season it had, on my land, double the effect of a bushel sown broadcast. Five to ten bushels are sometimes applied.

Phosphate of Lime is even more esteemed for a manure than the Sulphate. It is sometimes called the "Earth of Bones," as bones contain over 50 per cent. of this salt. Being less abundant than sulphate of lime, it is much more costly.—Bones are transported across the Atlantic to England, to be used as manure. Several hundred vessels are now engaged solely in transporting bones from various parts of the world to England. This phosphate is also an essential constituent of plants, though rarely to be detected in soils. But phosphoric acid, like sulphuric, arises from vegetable decomposition, from phosphuret of silicon, and perhaps other sources. If lime be present in the soil to fix it, not only is the vital action of the plant relieved from producing it, but much is probably saved that would otherwise be lost. The sha of cotton seed contains considerably more of this acid than bones do, and hence the immense value of this seed as a manure. But its effects are proverbially transient. With lime in the soil sufficiently abundant to fix the phosphoric acid, cotton seed would be a manure almost as permanent as bones. But to detail all the operations of lime in the soil, in assisting to prepare food for plants out of the vegetable and mineral substances—which compose it—would require me to write a much longer letter than you would read with patience. I have touched on the most prominent only. The general consequences, however, which follow, and which are regarded as arising peculiarly from its applications to land, require to be glanced at.

By opening stiff land, it renders it more permeable to the air, and more subject to atmospheric influence, while its surplus water more readily escapes. Quick-lime, when saturated, holds more water than common clay, such as yours, but yields it more readily to heat, and is therefore of great use in drying damp lands and rendering them warmer. But it does not give up its water so promptly as sand, and therefore renders that more retentive of moisture. In fact, Marl containing 50 per cent. of carbonate of lime, and the residue chiefly fine sand, will absorb more water than the common clay of your lands, and retain it as long. During the extreme drought last year, at one time, the plow turned up dry dirt in a field of mine marled that year at 100 bushels per acre, and not yet sufficiently mixed in the soil, while several days later, without intervening rain in a soil equally sandy and having less vegetable matter, but marled four years ago with 200 bushels per acre, earth quite moist was turned up at the same depth. You will readily perceive and appreciate the value of marl in this respect.

By rapidly naturalizing the noxious, and vivifying the good properties of the subsoil brought up in breaking land, lime enables the farmer to deepen his soil more speedily and without risk.—Mr. Ruffin's experience confirming the theory, is decisive on this point; mine, so far as it goes, is to the same effect. Lime undoubtedly hastens the maturity of crops. Writers abroad state that it advances them a fortnight Before seeing these statements, my observation of my own crops had led me to the same conclusion. Two weeks gained to the cotton plant is equivalent to a degree of latitude—a very material gain to us.

It is also stated on good authority, that lime in

land improves the *quality* of every cultivated crop, and that it has the effect of increasing the fruit in proportion to the weed. It is well known, that while the straw, stalks, &c. of plants, contain more of the carbonates, the seeds contain more of the phosphates. If the application of carbonate of lime increases the fruit more than it does the stalk, its indirect influence in producing phosphates is greater and more important than has been generally supposed, and its value is enhanced in a corresponding degree. It is said also to extirpate many noxious weeds. However this may be, I can testify that it gives great luxuriance to the growth of all the grasses with which our crops are infested. This, to the mere corn and cotton planter, may be no recommendation of it. I will state, however, that in a field planted in cotton in 1844 and rested last year, which usually produces a heavy crop of hog-weed, when turned out, there came up, although it had not been plowed at all, an uncommonly fine growth of crow-foot; which I can only account for from its having been marled. The part longest marled had the best crow-foot.

Lime is thought in England to prevent smut in wheat—to destroy many injurious insects—to preserve sheep pastured on land after its use from rots and foot-rot—and it is every where regarded as improving the healthfulness of drained lands. In short, it is now generally agreed, not only by scientific men, but by the best and most experienced farmers in every part of the world where it has been properly tested, that "Lime is the basis of all good husbandry,"—in which opinion I fully and cordially concur.

From the American Farmer.

Nutritive Value of Oat-Hay.

The following letter upon the above subject, from the pen of the late professor *Norton*, will be found full of interest, and not the less so that its lamented author has passed into another state of existence; for though he sleeps now with his fathers, his writings were so marked by good sense and true philosophy, that the intelligent mind found in them pleasure as well as profit. At the time this letter was first published we read it with feelings of approbation, and cut it out for insertion, but have been hitherto prevented from doing so owing to the press of matter upon our pages. As the time for seeding oats will be coming on a pace, we seize the present occasion as an auspicious one, to give it publicity, and call the attention of our readers to it. Professor Norton, as many of our readers know, was a gentleman of profound learning as an Agricultural chemist, added to which, he was passionately devoted to the science from a conscious belief in the vast benefits it was calculated to confer upon the agriculture of his country, and hence gave to every subject he discussed a thorough investigation. Therefore, the opinions and facts of such a man are the more valuable.

The letter originally appeared in the Albany Cultivator.

On the Nutritive Value of Oat-Hay.

ANALYTICAL LABORATORY, YALE COLLEG, }
New Haven, Conn. July, 1850. }

EDS. CULTIVATOR:—In the January No. of the Journal of Agriculture, published by the Highland and Ag. Soc. of Scotland, I notice an article "on Oat Hay, and the relative nutritive value of oats cut green and cut fully ripe," by Dr. A. Voelcker, Prof. of Chemistry in the Royal Ag. College at Cirencester. The subject is one which has long interested me, and I call attention the more readily to the statements made here, inasmuch as Dr. Voelcker is an old friend, in whose results I have much confidence. We have worked together in the Laboratory of Mulder, where he was first assistant, and I am sure that he will benefit the cause of agricultural science, now that his whole energies are devoted to it.

The idea of cutting grain while yet quite green, and of making it into hay in the same manner as grass, is not by any means entirely novel. Experiments of an imperfect nature have been made before the present ones, with this same end in view. Some of these have perfectly succeeded, while others have, if not unsuccessful, been at least less striking in their success. We have needed in the occurrence of these unsatisfactory experiments, some general principles upon which to reconcile them if possible, or at least discover the source of error, or by means of which we might more fully attain our object of inquiry. We need also the union of scientific with practical knowledge. Upon this subject, in order to the certain determination of many points, I will copy two or three sen-

tences from Dr. Voelcker's paper.

"On the other hand, I am convinced that practical men will remain in the dark on many of the most important points of agriculture so long as they despise the aid of chemistry, and persist in solving inquiries connected with agriculture by mere blind experimentising; By experiments I mean made without plan, or anything clearly defined and distinctly understood. If those engaged in such *random trials* will bear in mind that nature does not give a precise answer to an indistinct question; and if they would be candid enough to believe, in all cases in which an experiment has failed to answer their expectations, that the experiment itself, or the anticipated result, must be false in principle, and that consequently the fault is their own, and not on the part of nature—a great deal of good would be effected. Unfortunately, however, most men are as quick in condemning the value of the materials used in a bungling experiment as they are eager to praise and enthusiastic in recommending every result when the experimenter has some kind of theoretical notion in his head with which the experiment can be *made* to tally, the case is still worse. In this way a great deal of harm has been done, and the progress of scientific agriculture retarded instead of advanced."

There is much of sound practical sense in the above remarks, and every person who has studied over the numerous unprofitable and wearisome discussions, which fill up many of our agricultural papers, will fully appreciate it. It is for want of knowledge as to what they are about, that the contradictory results of most experimenters are to be ascribed.

In the present case, Dr. Voelcker seems to have hapily united science with sound practical views, and we consequently have intelligible and reliable statements from him.

The first point to which attention was directed, regarded the proportion of water contained in the straw and grain of the ripe and unripe oat respectively; both samples being of the same variety and taken from the same field. As might have been expected, the green oats contained most water; this is shown by the following table:

OATS FULLY RIPE.

Per centage of Water.		Proportion of Straw to Grain.	
Straw.	Grain.	Dry Straw.	Grain.
59.48	20.65	57.56	46.45.

OATS CUT GREEN.

53.30	28.66	65.43	34.56.

I have taken the mean of the various results given, as some discrepancy appears in the single determinations. By this table, several general conclusions are indicated—

1. That the proportion of water in the unripe plant is greatest.

2. That the proportion of the *dry* straw in the unripe plant is greatest.

3. That when the plant is dry, the grain bears a larger proportion to the straw than would have been imagined; being, even in the green plant, more than one-third of the whole weight, and in the dry plant nearly one half.

The next step taken by Dr. Voelcker, was to determine the nutritive value of his several samples. In this case regard was had only to the amount of nitrogen contained in them, that being considered the most important ingredient, in estimating any particular variety of nutritious food. He calls the body in oats which contains nitrogen, by the general name of protein; this name applying to a class of bodies that contain about as much nitrogen, and that are about as nutrious, as lean meat when it is dry.

The proportions, or per centages of protein obtained by Dr. Voelcker were as follows:

I. OATS FULLY RIPE—MEAN RESULTS.

Grain, 15.89 pr. ct. of protein compounds.
Straw, 8.4 " of " "

II. OATS CUT GREEN.

Grain, 17.87 pr. ct. of protein compounds.
Straw, 11.01 " of " "

No. II. was cut when the stalk and leaf were yet quite green, and the grain milky, but fully formed. They were cut at the same time, the green oats having been sown about one month later than the others.

The conclusions to be drawn from the above results are not only extremely interesting in a scientific point of view, but are of much practical importance.

1. We see in comparing the numbers in the ripe and unripe straw, that the latter contains 3½ per ct. more nitrogen than the former.

2. That the unripe grain also contains more nitrogen; this may seem a very strange result, but may be explained when we consider the fact, that the unripe oats, although they had not attained

their full bulk, had received most of their nitrogenous compounds, and that the after increase while ripening, must have consisted mainly in an accumulation of starch, and other non-nitrogenous bodies.

In addition to the facts established by these analyses, it is to be borne in mind, that the unripe straw is also much richer in starch, gum, sugar and other compounds of the same nature, all of them both nutritious and easily digestible, but which are for the most part in ripening, gradually converted into woody fibre.

Here too, the larger quantity of water, which has been already shown to exist in the unripe straw, is to be brought into the account. This water helps to render the food more soluble, and more easily digestible by the animal. We find then an equal weight of the unripe straw and grain, contains *more* nitrogen, more sugar and gum, and also more water; so that while it is *more nutritious*, it is also at the same time *more easily assimilated and digested* by the animal. This last is a point of more importance than is usually imagined. Of two kinds of food containing equal quantities of nirogen, one may be vastly superior in its effects when fed, and this simply because it can be readily digested; a large portion of the other may even pass through the body unaltered.

Dr. Voelcker gives, in addition to his theoretical results, two letters from farmers who have seen oat hay tried. One of them says, "that when cut fine, oat hay goes one-fourth farther than if the oats and straw had been allowed to ripen."

In many parts of the country, it is very difficult to produce good grass for cutting; but easy to grow quite tolerable oats, at least so for as bulk of straw and appearance of head is concerned. The grain may not fill out well if allowed to stand, but still would serve a good purpose as fodder when cut green and made into hay. There is no loss of the grain by shelling when cut in this way, and the hay would be highly relished by stock.

I have no doubt but the same system would do well in the case of rye, or other grains; hay made from them would also be exceedingly nutrative.—The facts given in the report of Dr. Voelcker, are quite sufficient to warrant my calling attention to this subject, and recommending experiments in such districts as feel the need of good winter fodder, and this of a variety that can be obtained without great expense. JOHN P. NORTON.

From the Western Plow-Boy.

Education of the Farmers—Colleges, &c.

In all efforts at improvement, no matter on what subject or in what direction, it is best to begin at the beginning; to go to the root of the matter. The beginning of agricultural improvement is with the agriculturalist himself. The startiug point is in his mental culture—his intellectual training—his *Education.*

The restless disposition to seek after something new and to be dissatisfied with whatever is old, forms a striking and peculiar characteristic of the American mind, and constitutes the distinctive type of the age and country. Nor is this disposition wrong or matter of wonder, so long as it is confined within the conservative limits of true reform and improvement. Too many look upon things which have become common and familliar by use, as they look upon a garment which they have worn, and consider that because they have worn it for a time, it is really worthless and must be thrown aside or changed.

In some matters this spirit of change and revolution may meddle, and with no danger of injurious consequences resulting. When, however, other matters are concerned, old and established, and tried institutions, this disposition at innovation and change is to be regarded and watched with deep concern and apprehension, lest we should injure useful establishments, and attempt a substitution of others in their places, inferior in point of ability, and more costly in their arrangements. In such cases, higher principles must govern, than those which actuate when we change the cut of our coats or the style of our hats. In such cases we should not follow the dictates of fashion, but the suggestions of enlightened reason.

If, following the fashion of the times, the popular cry is heard, for great changes in our educational systems and institutions—institutions the *alma mater* of the great and the good of our country and our times; men honored and distinguished at home and abroad for their attainments and exploits, whose discoveries in science and the arts have shed their beneficial influence over the nation and the world—we should lend a cautious and distrustful ear. We do not believe that our institutions are perfect, that they may not sometimes be improved by introducing changes into

their organization and course of instruction, but we do mean that an old and tried thing is not to be abandoned and thrown aside simply because of its old age, or a new one substituted in its place in simple obedience to popular clamor or the dictates of fashton. If old and established institusions and modes of instruction have failed to fulfil the beneficial purposes for which they were intended, let them be given up and abandoned; or if, in the change of circumstances resulting from the progress of society, they fail in their adaptations to meet our newly recuring wants and cannot fill the place they once occupied, let them be substituted by other and by better institutions.

We have been led into this train of remarks in consequence of the prevalence of opinions in certain quarters, and to a great extent in agrieultural circles, that our colleges and higher schools of learning are not adapted and fail to meet the *peculiar* wants of the farmer; that he needs institutions differing in character and plea from those which now exist; that the present will do well enough for lawyers, doctors and clergymen, who are to fill a different sphere of life and business, but are not adapted to the education of the farmer and agriculturalist. This view looks very plausible, and is in accordance with a class of prevailing and popular ideas, and it is no wonder that farmers should fall in with it and be made to believe that it is just the thing which the case requires.

Is the position taken by the advocate of the new system really sound and tenable? If the view taken by the advocates of change and reform be the right one, then of course to be consistent it must necessarily apply to all persons designed to be educated, and the lawyer, doctor, and clergyman must each have his peculiar and adapted institution. Again in order to reach the real merits of the question, how the farmer ought to be educated, it is necessary to understand first what the course of studies in the colleges and higher institutions is designed to accomplish. We answer they are designed to develope and strengthen the powers of the human mind. All the exercises and studies of the college have one end, and only end in view, the development of the intellectual faculties and powers. The systematic and thorough training of the student, in mathematics, languages or science, has no reference necessarily to his future vocation or business; it embraces not the ulterior question whether he is to become in after life a lawyer, doctor or clergyman, a farmer or mechanic. His whole course of studies and instruction is to be regarded as preparatory to his future calling; it is only a discipline laying a foundation. In his training and discipline, the student acquires more than what is merely rudimental, he gains much that is eminently practical in knowledge; yet still the course is designed for training and development of mind. For securing these objects, training and deuelopment, his course is wisely planned so that he proceeds from the less to the more difficult and obscure studies; it is designed to lead his mind from step to step in its upward course, as the intellect acquires new power by previous exercises. If we have not stated correctly the leading objects of study in early life, we must confess our ignorance of what those objects are.

If we are correct, then, in the position we have taken, what institutions are necessary and requisite for the education of farmers' sons. Shall we establish institutions which have no reference to the development and training of the intellectual faculties and powers—institutions which shall contract their views within the narrow limits of merely teaching the sons of farmers how to plow, to sow and reap; to analyze soils, classify rocks, and distinguish and call by name the different objects of nature; or to extend their acquirements farther and embrace the entire circle of sciences pertaining to agriculture? This is right and highly importsnt, so far as it goes, but it is radically and essentially imperfect and defective; it must still embrace, in order to meet the wants and necessities of the farmers' sons, that wide range of instruction which secures the full and entire object of mental discipline—that which shall develope the intellectual powers. Entertaining these views, we believe that institutions of the higher order already exist in sufficient numbers to meet all the wants and necessities of the country, especially in the older portions. We believe these views to be correct not only in reference to the full and entire objects of education, but equally true in regard to the economical aspects of the question.—We believe that while some local and incidental advantages may accrue, there are many and greater disadvantages resulting from the multiplication

of colleges. If the large sums necessary to be expended on new institutions; in the erection of buildings, sustaining a full corps of instructors, furnishing apparatus, and providing for endowments; were bestowed upon the older institutions, it would increase their efficiency and means of usefulness, and we should not often behold the mortifying spectacle of a so called, college with no attribute to distinguish it from an academy or high-school except its name, left to languish and fail of usefulness, for want of the promised support of those whose false views and over estimate of its necessity. led to its creation.

The plans which have been recently adopted in many of the older institutions of the country, are eminently calculatod to make them more useful to the agricultnralist; they consist chiefly in widening the range of studies in those sciences which have a particuliar application to agriculture, and are adapted to meet the particular wants of the farmer. In a word we believe that the institntions now established, are fitted in their organisation and course of study, to meet the wants of the farmers' sons, or that they may be made so with a very little alteration. We have spoken of the capabilities of our present institutions, and not of that course of institutions peculiarly adapted to the farmer. But, we ought to remember that it is not simply the farmer who is to be educated; we must take a wider range and more comprehensive view, includtng the man and citizen, in all their varied and responsible relations, and consider that course of education, which leaves these unprovided for, as essentially defective and unsound; as tending to engender and foster low and narrow views which pertain only to place and business, and regards the farmer as one who digs and toils, and nothing else. The principles on which our institutions of learning are founded, though ancient are not absolute, they rest upon that which is essentially unchangeable, while at the same time they are not yielding in their adaptations to the progress of the human mind as it advances in discoveries in science; enlarging their fields of operation; adjusting themselves to the altered conditions of society which they have been mainly instrumental in bringing about.

☞ All permanent improvement of lands must look to lime as its basis.

From the Farm and Garden.

American Women and Rural Life.

We readily concede all the essential and primary virtues of Amerioan Women. *En masse* they have never been exceeded in any age of the world, in all the qualities that constitute the best of wives, mothers, daughters, friends; and they are ever ready to undergo suffeing and privation when friend or country demand the sacrifice. If the history of the *Women of the Revolution* could be written it would astonish the world. Ay, too, or of the *Women peceding the Revolution*—when the war-whoop from every corner of the fields, from every angle of the road-side, sent a pang to their inmost souls; when the stealthy savage, lying in ambush for them, or those dearest to them, and aided by the keen gunnery of their Friench allies, might at any moment consign father, husband, brothers, and sons to a bloody grave, or their little ones to a hopeless bondage; when every privation, cold, exposure to the rude elements, hunger, toil, and sickness were endured for a century and a half, from the landing of the May Flower till the final struggles with our most unnatural parent—endured too with gentleness, modesty, unsullied virtue, patient meekness, and self-sacrificing forgetfulness of their own sufferings, that their posterity might be nurtured in piety and intelligence, the best interest of their country advanced, and a pure and undefiled religion disseminated throughout the world. All this we know from a carefully cherished tradition, having thus far been handed down by our earliest nursery tales through every age of childhood. If all these characteristics of our female ancestry were fully delineated, (and we know of no more prolific and useful theme for our literary countrymen,) we should have a graphic embodiment of female virtues, such as the world has not hitherto seen.—And we believe, too, that as a body, American Women have not degenerated; that their daughters and grand-daughters are ready now, as their grandmothers were before them, to endure whatever is neccssary for the advadcement of their kinkred, and country, and race. It is not the majority of them we have in our mind in the following suggestions, which we feel bound to make, but an unworthy few only, who have temporarily forgotten their true dignity and place. We allude

to such as either through affectation or disgust, *scorn* the scenes, and duties, and employments of rural life.

We never see a lady luxuriantly attired, and with all the surroundings of wealth and fashion, discussing the last concert or opera, and to every suggestion made by a country friend turning a deaf or indifferent ear, that we do not commiserate the littleness of her mind; and if to this she adds a contempt for country life or country enjoyment, our pity gives place to indignation, that beings claiming the possession of a soul, should so demean their nature and its Great Creator. They can, forsooth, admire the French flowers or feathers of their milliners, or the latest landscape of a fashionable artist, and absolutely go wild on the Echo of a Bird Song of some fair *cantatrice* in a close room, poisoned with gas and feted human breath; yet they have not one word or sentiment of admiration for the green woods and fields, the fresh and the feathered warblers that make a Paradise of the country. Some, perhaps many, there are who only acknowledging the claims of these to their admiration, nevertheless eschew all else that attaches to country life. The oversight and direction of female rural employments, the participation in which gives such a glow to the cheek, such elasticity to the step, and such vigor to both body and mind; and more especially, when all these are to be endured through late autumn, winter, and early spring—this, is *too much* for female endurance, and can by no means be tolerated.

Now we know many a fine, sensible man, (and if the ladies will promise to keep the secret, we will whisper in their ears, that it is by the urgent solicitation of some of them that we write this article,) who has a country domicil, and small farm attached, (which with proper inducement from its female inmates, he would gladly enlarge,) surrounded with all that can make home desirable, yet all is insufficient to attach the feminine heart, and on the advent of the first frost, they must forthwith away to town, to participate in the gay and heartless round of a winter's city dissipation. The husband and father might sell his city residence, and retire to his country home with a competency for his family, where all that is really worthy in life might be enjoyed; yet giddy female ambition dissents, and seeks still greater display and notoriety, and the overtasked father, driven to almost superhuman exertion to provide for his family's increasing wants, finally breaks down in health, and is consigned to a premature grave; his fortune is dissipated, and perhaps these same ambitious females are driven by want to eke out a slender support in some of the already overburdened employments of their sex.

We are sure we counsel our fair countrywomen wisely, when we advise all of them to foster rather than check the hankerings after rural life manifested by their husbands or fathers. Implant these predelications if they exist not already, and by every proper and gentle means aid to develop them if the germ is already there. Go with them to the country on the first solicitation, and if they have it not, aid them in selecting a pleasant rural residence. Embellish it with all the skill which belongs to a cultivated female taste. Participate in all the toils that may be necessary to make that home delightful, for health and pleasure wait on such exertions, and use your benign influence to keep your protectors from the perils and dissipations of city life rather than incite them to their participation.

From the Farmer and Planter.

Experiment with Guano and Barn-Yard Manure.

SHINGLETON, Sussex, Co., Va., February 18, 1853.

MESSRS. EDITORS: Although yours, dated the 31st of January, found my "pen ready nibbed," yet I must respectfully decline entering the "list" for a "free fight" with any of the champions of the "fungus theory" for smut. Close observation has convinced me as to the cause of smut; and nothing that has been said or can be said, will decide the question: a discussion on this subject is perfectly useless. A great deal of theoretical nonsense has already been brought to bear on this question. Francis Bonner, Esq., pehaps the greatest champion for the fungus theory, wrote ably and labored zealously to prove the cause he advocated, the true and only one. How fruitless the effort! Others have followed:—but theory will never put under foot truths that practical, close observing agriculturalists have arrived at.—The theorist may spin his "long yarns," however plausible, yet must rest contented with convincing those of his "own cloth." But enough of this.

I shall read with pleasure the discussion of this question, and shall look for some "far-fetched" arguments from the fungus theorists.

My object in addressing you, was to give the result of an experiment with guano compared with good barn-yard manure, on corn last season.

In the spring of 1852, I laid off that portion of my corn land that I designed manuring with barn-yard compost—having subsoiled and covered with scrappings from the woods, the remainder of the corn shift.

The manure applied—which I term barn-yard compost—was a complete mixture of stable manure, manure from fattening hogs, dropping from cattle, ashes, ditch bank earth, plaster and salt.—This manure was in fine condition when applied, being slightly fermented in the heap. An excess of fermentation should be avoided in the heap: the earth is the proper place for complete fermentation—then that portion of manure which are volatile, are secured and held in reserve for the cultivated plants. A heavy dressing of this compost was applied broad-cast, and covered some six or eight inches with a two horse plow. The manuring being completed, I found that there was something over an acre of land left unmanured—on this I determined to try guano; and in this way, at the second working of the corn, throw the earth from the corn ("narrow way") with single turn plows, running some ten or twelve inches from the plants—then deposit two table spoonfulls of guano in the furrow just opposite the plants, so that in the future cultivation of the crop the guano would not be disturbed by the plow or hoe, as the cultivation would be the "wide way."—The guano mixed with ¼ plaster was thus applied about the last of June; putting a single table spoonful on each side of every plant, and turning the earth back to the corn as fast as the guano was applied. It was not disturbed in the least, in the further cultivation of the crop.

Notwithstanding the crop was then suffering from a severe drought, which continued many days after the application of the guano, yet its effects were to be seen in the dark green which the corn assumed in a few days. Some fifteen days after its application we had a very good rain, then its stimulating and beneficial effects began more rapidly to develope; the crop grew more rapidly where the guano was applied than that portion to which the barnyard compost was put, and I began to fear an excess of stalk and blade. I left one row through the centre of the guano piece unmanured, in order to test its effects more satisfactorily. In November the entire crop was gathered, and an average row was selected from the guanoed piece and the manured portion. Here is the result. measured carefully and accurately: Manured row, measured at the rate of 20 bushels per acre. Guanoed row, rate of 32 bushels per acre. Unmanured row, rate of 13½ bushels per acre. It is but just to state, that owing to the severe drought, the barn-yerd compost did not benefit the crop but little, that portion of the crop suffered more than any other, and was greatly injured. That portion of the crop to which wood scrappings was applied and the land subsoiled, kept its color throughout the drought, and made as good a return as the manured land did in proportion to its fertility.

Truly yours,

THOMAS E. BLOUNT.

From the Cultivator.

The Forces of the Farm.

Success in any business requires a thorough knowledge of the means and material under employ. Place the levers of a locomotive in the hands of one who had never before seen this powerful machine, and instead of being able to drive it with the speed of the wind and the precision of mathematics, he would be sadly puzzled to know what first to do with his important charge. What could a plowman do if required to superintend a cotton factory? Or a blacksmith the machinery of a wholesale merchant? What could a shopkeeper accomplish if placed in charge of a threshing machine, a horse-reaper, or a subsoil plow? We should all doubt the sanity of the man who would send for a lawyer to set a fractured limb, although he might point out to the nicety of a hair the rights, privileges, &c., of John Doe and Richard Roe, and their legal representatives. But it needs no argument to show the absurdity of looking for knowledge where it is not to be found; it is not, however, quite so plain to every one, that no business can be well conducted without thorough knowledge of all its parts. The idea that men

succeed by a sort of lucky guessing, instead of a thorough mastery of facts and principles, is quite too prevalent.

We remember some years ago, as an example, that a newly invented water wheel was highly recommended to the public as possessing, with an equal amount and fall of water, three times the power of the best overshot wheel. The wildness of such a claim would have been instantly evident, to many who were deluded by it, had they only known or reflected, that the principles of gravity are such, that one hundred pounds of water descending ten feet, could never, by the most cunningly invented machine, be made to elevate more than a like quantity of water to a similar height, or do its equivalent in any other way. The heathen poet, who, in his historical fictions, spoke of wine that was twenty times stronger than common, that is, four times stronger than pure alcohol, did not commit a greater blunder than many do in their estimates, or rather vague conjectures of the power of machinery:

Inventors of farm machines, like most other men, resemble very much a flock of sheep, and follow where some one is bold enough to lead. Hence we see that they have not struck off so much into every possible avenue, as they have travelled with the mass in certain beaten tracks. We have a plow invented for nearly every county in the Northern States, but not half a dozen well-constructed harrows; we have had for a long time, a vast number of thrashing machines, but until very lately, scarcely a reaping machine was known. The World's Fair, it is true, has turned the tide of fashion in the latter direction, and we shall now soon have them by scores. We have been supplied with as great a variety in churns as the dishes of a French cook; yet a good milking machine, a thing of much greater consequence, (counting the time consumed,) has never yet been made. We have often wondered why Yankee ingenuity had never yet devised a good *mangle*, although hours are consumed every week, in nearly all families of this broad country of 20 millions, by the hard labor of the ironing table; yet sausage-stuffers and sausage-mincers, paring-machines and pepper-grinders, have all had a large share of attention, although perhaps used but once a year.

We cannot but believe, that one great reason of the deficiency in these, and in many other particulars, is that farmers themselves do not adequately comprehend what is needed, and what may be accomplished. They do not possess a sufficient knowledge of the principles of machinery, in many instances, to qualify them for judging of the merits of new machines; to know how much and no more, the best application of force can accomplish; and especially to enable them to judge with some degree of confidence, whether inventors have nearly reached perfection in any particular point, or whether there yet remains a great field unachieved before them. It is here, if anywhere, that a thorough knowledge of means and materials —of facts and principles—is needed, to enable every one to conduct his business understandingly. We will furnish a few examples, by way of explanation.

The crow-bar is simple and effective, and, so far as it goes, may be considered as having about reached perfection. It possesses but little friction, and a given force applied to it is wholly applied, without any loss, to the desired end. How is it with the reaping machine? One man, with the best hand-machine, will cut two and a half acres of wheat in the day. A horse is reckoned to the work of five men, consequently a two-horse reaper, deducting one-fourth for the friction of the parts, should do seven and a half times as much work as a single hand, or nineteen acres in a day —an amount which has been nearly reached by the best reapers. They cannot, therefore, be expected to be greatly improved in the quantity, but rather in the perfection of their work, and in cheapness and simplicity. Apply the same kind of calculation to the plow, and the reader cannot but be surprized at the great field yet open for improvement. A cubic foot of earth weighs about 125 pounds; a team turning a slice a foot wide and six inches deep, and moving four feet per second, lifts two cubic feet of soil, or 250 lbs. in each second, about on an average seven inches high. Now, a good American horse has been found, in ordinary work, to lift one hundred pounds, at the rate of four feet per second, or seven hundred lbs. seven inches high per second, which is nearly three times as great as the amount effected by two horses attached to a plow. That is, five-sixth of the force applied is expended in overcoming friction and cohesion. Here is a chance for inventors to ex-

ercise their ingenuity for a long time to come, in endeavoring to lessen this loss of five hundred per cent.

A two-horse team, as we have just remarked, should do nearly ten times as much work as a single hand. This remark applies to cases where the full strength of the man is exerted to the best advantage. But the gain by machinery is greater if well perfected, in doing what men perform to a decided disadvantage, or where their strength can only be partially applied. Such for example, is the case with some of the best seed planting machines, as compared to planting by hand,; or of some of the most perfect horse hoes or cultivators, as compared to the slow and tedious process of hand weeding, in neither of which instances is one half of the human strength advantageously applied. It is here that inventors are to look for extraordinary results. The manufacture of cotton furnishes an interesting illustration—where the best modern machinery turns out in each day at least two hundred times as much goods as the tedious process of hands and fingers accomplished eighty years ogo.

Our limits will not allow us to enter into the details of this subject, which would furnish ample materials for a volume. We only wish to *call* the attention of farmers, whose business it is to judge of farm machinery, and furnish suggestions to manufacturers, to the importance of thoroughly understanding the subject.

It is interesting to look back and see what has already been done. The capital now invested in farm labor and farm forces in the United States, is not less than five hundred millions of dollars per annum, although but one half of what it would have been, but for the improvements in the plow, the thresher, the fanning mill, the seed-sower, the horse-rake and the reaper. What may yet be done towards reducing this enormous amount, must depend on the ingenuity of our inventors, and on the general knowledge and experience of our farmers.

No lands can be preserved in a high state of fertility, unless clover and the grasses are cultivated in the course of rotation.

To manure, or lime wet lands, is to throw manure, lime and labor away.

From the Journal of Agriculture.

Power of the Soil to retain Manures.

BY PROF. J. J. MAPES, NEWARK, N. J.

We propose in our present number to show the power of the soil to retain manures, and the means of improving this property when required.

For a long time it was supposed that all materials soluble in water would pass downward in solution, and thus be lost to plants—those who worked clayey soils claimed that, because water could not readily percolate their soils, that hence, they were not *leachy*, and therefore retained manures—while other operators with sandy soils argued that manures passed downward and were soon lost to the surface of the soil.

All these position are false. It is true, that a fair proportion of alumnia is valuable to soils, and in the absence of carbonaceous matter is absolutely necessary for the retention of manures, but it is not true that the tenacious property of clay need exist to such an extent as to prevent the free filtration of pure water before the manures will be retained—for many soils which will pass pure water readily, will still retain, from impure water, all its impurities, permitting only the pure water to descend. Indeed this is true of all arable soils, and if it were not so, the water in all our wells would be unfit to drink from being surcharged with soluble organic matter.

Even the brown fluids of a barn-yard will not leach downward in the soil, without leaving all the fœtid matter in the surface. Dig in an old barn-yard, but a few inches below where the soil has been before disturbed, and it will be found not to contain any undue proportion of the soluble matters resident at the surface, but to be like the subsoil of adjoining fields.

Alumnia (clay) has the curious property of receiving and retaining all animal and vegetable substances, and their gaseous products, until abstracted again by growing plants, and for this reason a free clayey loam will purify water during its passage through the surface soil, retaining all the fertillizing substances originally held in the solution, and permitting the pure water to pass downward. Nor does this retaining power cease with organic substances alone, for many of the alkalies are also retained, and all of them to a certain extent. Excess of lime, potash or magnesia will

pass down and therefore the chemist finds variable proportions of these alkalies in our well water.

This peculiar property of clay was noted by Mr. Teschmaker of Boston, in his public addresses many years since, and in our published addresses before the American Institute, as far back as 1840, the same truths are set forth. Within the last two years, Professor Way and other English chemists are claining this as a new disoovery.

Alumnia is not the only substance in soils which has this retaining power, for carbon in every form has similar properties, and it is not important whether charcoal dust be artificially added, or exist in the soil by the decay of former vegetation or of manures; for in either case carbon is the result, and as such, has similar retaining powers to those of clay. Thus charcoal dust placed for a time near a fermenting dung heap, will receive and retain the gases arising from decomposition, and if placed in the soil will give out these gases again to the roots of growing plants. Privies, stables, &c., are rendered inodorous by the use of charcoal dust. Decomposed peat, turf, swamp muck, &c, are but varied forms of carbon, with some more partially decomposed vegetable matter. The dark color of soils is due to the presence of carbon; humus, vegetable mould, &c., are but modifications of carbon.

All know that an old and black garden soil will retain manure longer than field soils, and that a less qnantity of manure will act in them, for the simple reason, that the carbon (charcoal,) contained in them, and arising from previous decay, retains the reluctant gasses from the decomposition of the manure until used up by plants.

Let any farmer try the following experiment and he will be satisfied of the truth of our statement.

Prepare four barrels by taking out the upper heads and boring small holes in the lower heads, stand the barrels on end and fill them with the following substances:

No. 1. Barren sand with one-tenth the bulk of clay intimately mixed throughout the mass.

No. 2. Barren sand with one-tenth of finely ground charcoal dust.

No. 3. A dark colored loam or garden soil.

No. 4. Barren sand alone.

Pour on all four barrels the brown solution from the barnyard, and it will be found, that the water running out of the bottoms of Nos. 1, 2, and 3, will be colorless and without smell, while that from No. 4 will be unaltered and as offensive as when placed on top.

The question may now be asked, "if the soluble results of vegetable decay do not filter downward, what becomes of them?" We answer, that resident in the earth's surface, from the combined influences of sun and air, they decay, and take the gaseous form; if the soil contains either clay or carbon, these gasses are absorbed by them, until abstracted by growing plants. But if these substances are not resident in the soil, then the gasses rise into the atmosphere, and are absorbed by better prepaired soils elsewhere, or are carried to the ocean and are thus lost for a time from the land.

Let our readers reflect that both the vegetable and animal productions of the earth's surface are continually decaying, and that nothing but the facts we have stated can account for continued fertility. For if the results of decay could filter downward in solution with water, long before this time, the whole amonnt of organic constituents would have passed below the fertile surface, all our wells would be filled with masses of filth, and both animal and vegetable life would have ceased. The simple facts are, that all organic manures do decay in the earth's surface, and are only lost by rising in the gaseous form, and not by sinking below the roots of plants, and therefore they should be plowed under to such a depth that their resultant gasses when rising shall meet with a sufficient quantity of alumnia or carbon to arrest them.

From the Working Farmer.

The Seed Trade.

Our seed dealers, or at least some of them, are rapidly learning English practices, and it has already become difficult to find pure seed of the better class of garden vegetables, and even the grass seeds are often sold of mixed and very inferior qualities. There are doubtless some dealers who pursue an honorable course, but hundreds of wagons are now traversing the country, selling seeds of inferior quhlities. The market gardeners near our large cities seldom or never buy seeds of the large seed dealers; they are compelled to purchase from each other, each raising some one or two kinds,

and making the necessary exchanges. Late Bergen Cabbage seed is seldom sold by market gardeners for less than $8 per pound, still you may buy seed purporting to be the true Late Bergen Cabbage, at $2 per pound, or even less; but as no grower requires but a few ounces of this seed, it is certainly better to pay the large price to obtain the pure article. A seed dealer in Newark is now selling a bean which he assures his customers has been lately imported from Lima, and is the true Lima Bean. It is flat, with its two sides parallel throughout, and is not a profitable sort.—The Lima Bean of the true kind, whether grown in Lima or elsewhere, is short, very thick, and with a deep dent in each side, and none other should be grown. We have several times been tempted to buy seeds from large dealers, and have nearly as often found ourselves deceived. In some instances they were not true to the label, in others new and old seeds were mixed together, and in many instances they would not germinate at all. We imported last year from England, under the cover of a popular name as a seed dealer, a quantity of early sorts of Cabbage seeds, and have now several bags on hand which are worthless.

From the Working Farmer.

Advantages of Fairs—Improvements—Draining.

Extract of an address delivered at the Ohio State Fair, at Cleveland, by Professor J. J. Mapes, editor of the Working Farmer, consulting agriculturalist, etc., etc.:

To farmers, the benefits arising from fairs are incalculable; farmers are not a migratory race; their vocations require them at home, and therefore improvements which occur in one township or county, may remain unknown for a century or more, to adjoining counties. There is scarcely a state in the Union, in which one or more farmers have not succeeded in producing one hundred bushels of shelled corn per acre, and still millions of acres of similar soils continue to be improperly worked and to produce forty bushels, or less, per acre. The fairs and the press alone can remedy this evil. By vtsiting fairs farmers are brought in contact with farmers, interchange of facts occur, improved specimens of crops, of stock, etc., are seen, and each individual returns home stimulated to surpass his neighbor.

Seeds undergo hybridation and deterioration of quality, unless occasionally moved to a new locality. At fairs interchanges of seeds occur, scions, grafts, and cuttings are exchanged, and any new fruit seen by the horticulturalist induces its introduction into some new district. Addresses are delivered occasionally to the advantage of the listners, new implements are invented, and these, if of approved kinds, are introduced for general use. Labor-saving machinery does much to the advantage of the farmer; indeed, it often causes a difference of profit equal to that required to change a losing into a gaining business.

In relation to the improvements in agriculture, which have transpired within the last few years, the speaker stated that they were greater than during all previous time; that the iron plowshare was introduced but eighty years ago, and then in so rude a shape, that ten plowmen of its time, with a corresponding number of teams, would be required to perform the labor now readily performed by one. As to the importance of agriculture generally, he observed that a thousand millions of human beings were supported by it; that nine-tenths of all the available capital in the world, was engaged in its exercise; that despite the highly vaunted powers of the merchant, he was but the factor or broker of the farmer, and the success of his agency was entirely dependent upon the amount of agricultnral product. Our Corn crop of 1850, was estimated at 600,000,000 of bushels, worth at the export value of the year, $300,000,000; and this only one of several crops, nearly or quite equal to it in value. So great is the sum total, that a saving of the half of one per cent would be greater than the present income of the government from duties on imports, sales of public lands, etc.

The two greatest agricultnal improvements of the age are under-draining and subsoil plowing.—Draining can be rendered a source of great profit, wet lands cannot be tilled; the mechanical disintegration, arising from plowing such lands, remains but for a short time; soil when wetted to saturation, will settle more solidly after the lubrication of its ultimate particles by water than from any known means of mechanical compression; soluble manures are wasted in subsoils; the

chemical changes dependent upon the free and frequent circulation of the atmosphere are arrested; indeed moist soils are not arable until properly under-drained, nor are all the advantages arising from the use of under-drains dependent upon getting rid of an excess of water; the very hill tops are benefited by such treatment, and this benefit will be more fully illustrated when discussing the advantages of subsoil plowing. * * *

The next most important improvement is the use of the subsoil plow. Wet lands are not improved by subsoiling until after having been under-drained. The subsoil plow does not turn over the soil like a surface plow; it follows the surface plow, and is propelled by a separate team, the beam lying on the bottom of the surface furrow, and disintegrates without elevating the subsoil.

The admission of atmosphere freely circulating through this subsoil, secures the chemical changes dependent upon its presence, and enables the surface plowing to be gradually deepened; but this is not all the benefits arising from subsoil plowing. The roots are permitted to pass down and receive the constituents of plants resident in the suosoil, and to carry them to the surface to complete the vegetable organism. In times of drought the roots may pass down for moisture, and in times of excessive rains part of the roots at least will not be drowned out.

The greatest benefit, however, is that thoroughly under-drained and subsoiled land never suffers from drought. The reasons is obvious, and may be thus explained: You will perceive the pitcher in front of me is covered, on its outside, with drops of water. These, you will readily understand, could not have passed through the pitcher. But as the temperature of the pitcher is colder than that of the surrounding atmosphere, it has condensed upon its surface the moisture of the atmosphere; for in the hottest day in summer, the absence of moisture from the soil merely goes to prove its existence in the atmosphere, and when the heated air containing moisture passes through under drains, or down into subsoil cuts, it deposits its moisture upon the cold surfaces of the particles of the subsoils, and thus protects the roots from suffering by drought. Corn never rolls its leaves on thoroughly drained and subsoiled lands.

☞ Young stock should be moderately fed with grain, in winter, and receive generous supplies of long provender, it being essential to keep them in fair condition, in order that the formation of muscle, bones, &c. may be encouraged and continuously carried on.

☞ Milch cows, in winter, should be kept in dry, moderately warm, but well ventilated quarters, regularly fed and watered three times a day, salted twice or rhrice a week, have clean beds, be curried daily, and in addition to their long provender, should receive succulent food, morning and evening.

☞ Weeds should never be permitted to mature their seed on a farm, but be pulled up, or cut down as often as they show themselves, such being the only effectual method of eradicating them. To ensure this result, the ground should be planted in corn, and thus keep clean.

☞ Time and labor, devoted to the collection of materials to be converted into manure, are the most fruitful sources of profit in the whole range of farm economy.

☞ The orchard, to be productive of good fair fruit, requires to be fed, as much as does a field of grain. The soil of each requires that the substances abstracted by the crops shall be restored. The soil should be kept clean, and open to the meliorating influences of the sun, the dews, the rain and the air—the bark of the trees should be kept in a healthful condition, by scraping, when necessary, and by alkaline washes.

☞ Lands which have been long in culture, will be benefitted by applications of phosphate of lime, and it is unimportant whether the deficiency be supplied in the form of bone-dust, guano, native phosphate of lime, compost of fish, ashes, or in that of oystershell lime—or marl—if the land need liming, also.

☞ All highly concentrated animal manures are increased in value, and their benefits prolonged, by admixture with plaster, salt or pulverized charcoal.



American Cotton Planter.

MONTGOMERY, ALA., MAY, 1853.

N. B. CLOUD, M. D., EDITOR.

Our Agents.

Wm. Strickland, Book-seller, No. 28, Dauphin street; Boullemet's Literary Depot—corner of Royal and Dauphin street; H. H. Carver & Co., Battle House Book Store, Mobile; from any of whom the back numbers may be had.

A. P. Pfister, Exchange Corner; C. R. Hansford, Market street, Montgomery.

With *The American Cotton Planter*, our agricultural friends will find all the new and valuable publications of the day, either literary or agricultural, at the above-named Book Stores.

Mr. Amos Travis is our agent at Gainesville, Sumter county.

Mr. N. Plumb, Sparta, Conacuh county.

E. B. Fox, Sandy Ford, Fla.

Capt. J. Jack, Havanna, Sumpter county.

Wm. G. Brewer, Tuskegee.

H. C. Bissell, Carlowville.

Dr. Wm. Cunningham, Burnt Corn.

Dr. J. F. Dortch, Camden, Ala.

E. J. Capell, Esq., Rose Hill.

Isaac Parks, Oak Bowery.

Dr. Batt Peterson, Clayton.

Jas. Montgomery, Fife, Ala.

N. A. McMillan, Canton.

Dr. J. E. Poellnitz, Montpelier.

G. M. Reynolds Mr. Turnir, Mr. B. M. Clark, and Mr. M. P. Douthit are our traveling agents.

☞ Our subscribers will please notice, that as our terms are invariably cash, the receipt of the Journal is the best evidence that we have received the *dollar*. Any subscriber having ordered the Cotton Planter in compliance with the terms on the title page, will confer a favor, should it fail to reach him, by informing us at once. All remittances at our risk through your Post Master, or registered by him. It will readily be perceived that this arrangement will save much unnecessary trouble in receipting &c., and be entirely satisfactory.

CORRESPONDENTS.

We have received Communications since our last number from Dr. M. W. Phillips, of Miss., Dr. N. S. Sorsby, of Green Co., Ala., "Clod Thumper," Talladega, "Y. A." of Marengo, "A. A. D.," Montgomery, "S." and George G. Henry, Mobile.

☞ We conclude in this number of the Cotton Planter, from *DeBow's Review*, that highly interesting and valuable article on the "History of Cotton Manufactures." We are pleased to be able to append to this article the name of the author, which does not appear in the Review. We hope very soon, again to be able to furnish our readers an article on the same or some kindred subject perhaps, of half the importance of Cotton, and with its varied and innumerable use, about which our planters have such scant means of information.

☞ We ask the attention of our readers to the advertisement of Mr. William Wright, to be found on the 4th page of the cover. Mr. Wright is a professional mechanic, and is not only prepared to furnish every article in his line, of superior quality, but it may be of importance to our professional friends, physicians and surgeons, and planters also to know that various instruments in constant use are made and adapted to the particular cases in which they may be needed—such as trusses of all varieties, spinal supporters, instruments for incurvation of the limbs of children, club feet &c., artificial limbs, laced stockings, ankle socks, knee caps for varicose veins, &c.

To planters, an opportunity is afforded here, in the certainty of getting an instrument that fits well, of incalculable advantage. Every physician and many planters know the trouble, the suffering to such unfortunate hand and frequent expensive visits, from an old patent truss, imperfectly adjusted and not suiting the case.—Mr. Wright can remedy all such difficulties.

See advertisement.

WILL PEAS KILL HOGS?

Dr. Swasey, of Poplar Hill, Miss., in the conclusion of his article, in the the last number of the Cotton Planter, remarks: "Will you be so kind as to give us your *views* on the subject?" It will always afford us a great deal of pleasure to answer any question that may be asked us, or give our views, at least, on all subjects connected with the interest of the planter. This question, though rather hackneyed, "will peas kill hogs?" is nevertheless one of very material interest to the planter. Our views and experience on this subject, coincide so nearly with those of Dr. Swasey, that it would be an unnecessary repetition of the same article to attempt a lengthy discussion. The Pea, in all its varieties that we have seen or tried, furnishes the planter cheaply with an invaluable article of food, for fattening stock, and for negroes, when properly used. That they will under un-

favorable circumstances injure and kill stock there can be no doubt. Some cases have occurred in Macon county the past season, in our immediate neighborhood and among planters who have never heretofore lost stock or hogs from peas, very similar to those mentioned by Dr. S.

These Gentlemen have changed their opinions on the subject. Our theory of the seat of the disease, being inflamation of the stomache and bowels, we used calomel in a few cases—they were desperate too, before we saw them, and we have abundant reason to believe, that with careful attention, this treatment would have proved successful in each case. The experiment was an unfavorable one, and conducted to great disadvantage. One recovered and is now doing well, and the other died. If we should ever have an opportunity again, we intend to give this treatment a fair trial. We shall have much to say on the subject of the pea hereafter, as we are very confident that there are many articles of vegetation, that can be substituted to great advantage to the *improvement* planter, for a large proportion of the pea crop.—We should be pleased to have the views of our planters on this subject.

OUR CABINET OF EXCHANGES.

We had intended previous to this time, to furnish our readers with a short chapter of notices, of our co-laborers in the field of agricultural improvement, but have been prevented untill now by pushing engagements. Our readers will perhaps be pleased to observe the sources, profuse and varied, from which, apart from our rapidly increasing corpse of correspondents, we serve up for them, a monthly repast of practical agricultural reading. We find first (as we intend to class them according to age,)

The Cultivator, (Albany,) well and favorably known by every deciple of agricultural improvement in this country. With this volume it enters its third series and twenty first year—it is of age therefore and can speak for itself. It is edited and published by Luther Tucker at Albany, N. Y., where it was commenced in 1832 by Judge Buel. It is printed in fine style, on good paper, and in royal octavo form, price 50 cents per year.

The Southern Planter, of the "old dominion," the successor of "The Farmers Register," and edited, we believe, by the son of the venerable Edmund Ruffin. This is a valuable paper and has entered its 12th volume, and is publiahed at Richmond Va., at $1 a year to cash subscribers.

The Southern Cultivator.—Everybody knows the Southern Cultivator published at Augusta Ga., that has wrought so much good for the planters of the cotton States. It has now entered its 14th volume, enlarged and improved, preaching and practicing improvement at home and abroad. Of course we all intend to go to the fair at Augusta next October, and no planter should fail to make the acquaintance of the editors, Dr. Lee and Mr. Redmund, or the publisher, Wm. S. Jones, Esq. Form, royal octavo, 32 pages, and price $1.

The American Farmer.—This is also a valuable agricultural paper, and has done much good service in the cause of improvement in this country. It is published at Baltimore Md. Medium octavo, 32 pages; price $1 a year.

The Working Farmer.—It is said poetically, that "There is nothing in a name &c," but we are decidedly fond of this name "Working Farmer." There is something in that name, and something valuable too in every number of Prof. Mapes' Working Farmer. This work is published at the American Institute 351 Broadway, N. Y. Each No. contains 24 pages large folio 3 columns, and has entered its 5th volume. Price. $1.

The Farmer and Planter.—This is a most excellent paper, containing much useful and practical information to the cultivators of the soil. It is a folio of 16 pages, covered, and published at Pendleton, S. C., and Edited by Messrs. Seaborn and Gilmer. Price $1. The Farmer and Planter has entered its fourth volume.

The Soil of the South.—We regret that by some mishap or other we have not enjoyed the pleasure of receiving this very excellent paper this year. We have however seen it occasionally and shall get it yet. The Soil of the South, has, and is still doing good service in the south west. The names of its editors are safe guaranties of its ability. Mr. Jas. M. Chambers is its agricultural editor and the well known Charles A. Peabody, Esq., its horticutural editor. It is published at Columbus. Ga., at $1 a year. In commencing its 3d volume, its form is changed to an octavo medium of 32 pages.

The Southern Agriculturalist.—This is a new work just commenced this year, promising much usefulness in both its agricultural and horticultural departments. We noticed this valuable publication in our last. It is published at Laurensville, S. C. Its editors, Col. A. G. Summer as agriculturalist and Mr. Wm. Summer as horticulturalist and Pomologist are well qualified to fill the positions they respectively occupy. The Agriculturalist is well printed, contains 32 pages royal octavo. Price $1 a year.

The Farm and Garden—Another new and exceedingly valuable work, the successor of "The Plow." It is published by A. B. Allen & Co., New York. Its style is also new, and it is in every respect a beautiful paper, containing 32 pages, royal octavo.—Price $1 a year. Some of the readers of the Cotton Planter may visit New York this summer on a visit to the World's Fair. If so, and any fine Devons or other dairy stock or improved agricultural implements, or fine fruit trees of any kind are wanted, call on A. B. Allen & Co., 189 Water Street, and you will be well served.

The Western Plow-Boy.—This is also a new labourer in the field of improvement, and promises well. It is published at Fort Wayne, Indiana, in semi-monthly numbers of 16 pages at $1 a year. That fine article in this number of the Cotton Planter on the subject "Education of the Farmers—Colleges, &c.," we take from the Plow Boy.

The Horticulturist.—This is one of the handsomest, most valuable and practical publications of the country. This invaluable work was commenced and conducted up to the period of his death by the late A. J. Downing. In the hands of its present editor Mr. Barry, it seems to have lost none of its spirit or sprightliness. It is published at Rochester, New York. Price $2. Plain.

The Miscellany and Review.—We have just received. It is well filled with quite a variety of articles. "Home enterprise" is its motto. It is published at Memphis Tenn. Price $2 a year.—The number before us is very handsome and well printed, and its articles diversified.

The Southern School Journal.—We have heard of such publication in New-England, but we had no idea that any man in this country, possessed the temerity to face the "*old field fogies*" of the south. "Fortuna favet fortibus." This is a Perverse generation Mr. Scott, lay on your licks thick and hard. You have commenced a noble work, and deserve to succeed. This is a neat publication of 16 pages, published at Columbus Ga. Price $1. Every body that has children to educate should take it.

Alabama Planter.—This is the weekly edition of the Tribune and Herald of Mobile. Unpretending, it has gone forth for years lighting up the new and humble home of the planters in their new settlements. It is edited by Messrs. McGuire & Ballentyne—Price $3.

We also find the Southern Ladies Book. This is not an agricultural work, but it is a literary companion for the fair daughters of our southern agriculturalists. It is a beautiful and sprightly publication of its kind. It is a southern enterprise and deserves well, at the hands of the southern people, a tythe of the support given to our enemies for publications in no essential particular better, and in many respects, greatly inferior, would make the Southern Ladies' Book the casket of American female literature. It is published in the Crescent City, by Messrs. Wm. T. Leonard, & Co., and edited by Miss L. Virginia French. Price $3.

We promised a short chapter in this revelry of books, if however the patient reader has accompanied us thus a long, he is ready doubtless to jog us on the elbow, but the end of the chapter is hard by. Our weeklies, it is impossible to do them justice now, for the courteous treatment we have received at their hands. The bare mention of their names would fill a column, extending as they do from Tar river to the Crescent City, and all around about like so many honey bees, sipping the nectar of news from every new and occuring incident for the American mind and intellect.—To you, gentle readers and our exchanges all, we bespeak a season of peace, quiet and golden prosperity.

SOUTH WESTERN INDUSTRIAL FAIR.

We received from our respected friend, Dr. Plough, yesterday evening, a late number of the Daily Orleanian, announcing the passage through the Senate of Louisiana of the bill for incorporating the Executive Committee and members the Industrial Fair of the South and South West. We hope soon to see the ball in lively and spirited motion. We believe the Executive Committee will now act, act promptly, and act on a liberal and magnificent scale. We hope the Committee think of nothing but an exhibition and Fair superior to those of London or New York. Determine that the exhibition of the Crescent City shall eclipse any thing of the kind ever witnessed heretofore. Let the spirit of the great south-west be fired up on the subject. Let the State Executive Committees be called out, and our people, planters, mechanics, and manufacturers be fully aroused to the importance, the utility, and the pride of a great national movement in the industrial pursuits of our common country, and a triumph—a glorious triumph—must inevitably ensue. Let every man feel that he has a nich to fill, yea more, let him determine that it shall be filled, and well filled, and beautifully; not with the common fruit of his industry, but with the first, the master piece, the crowning effort..from the plowman, whose rustic, yet plastic hand moulds the soil, and with the genial seasons, elicits fructibility, plenty and prosperity from our fields, to the artist, whose skill and cultivated taste chisels to nature, or pencils the tinted life enspiring shade of the landscape. A proper, laudable and generous effort, not only to succeed, but to succeed triumphantly, on the part of every one interested in the improvement of the arts and industrial pursuits of our country, with a speedy development of its varied and valuable resources, must and will accomplish an object so desirable.

We shall await with impatience the announcement of the programme of policy intended to be pursued by the Executive Committee. There is now no excuse for inaction, nor is there time for delay. We are confident that the warmest friends of this enterprise have every confidence in the talent of the Executive Committee, and if that talent be now seconded by energy, success is certain.

OUR COMMERCIAL LETTER.

Our readers will peruse with careful attention, our commercial letter,—"Cotton, Prospect of prices, &c." In its facts and details, it is interesting and gratifying to the planter. In its frank and candid advice, it teaches a wholesome lesson, the practical utility of which should be understood by all.

Draining of wet lands and marshes, adds to their value, by making them produce more, and better crops—by producing them earlier—and improving the health of neighborhoods.

Abundant crops cannot be grown for a succession of years, unless care be taken to provide and apply, an equivalent for the substances carried off the land in the products carried thereon.

Plantation Economy.

[FOR THE AMERICAN COTTON PLANTER.]

No. 6

Dr. N. B. Cloud—*Dear Sir:*—Many may think my ideas of plantation economy to be very large, and that I draw out rather extensively. But so it is, I believe, that true plantation economy will even cover the education proper of the planter, as it fits the owner the better to manage. My object at present being the advocacy for improvement of hands, I suppose no one will object to my using the heading.

I have seen it stated that the "item of underground draining alone on an estate of 500 acres" in England amounted to "1800 pounds sterling" or "$7500 or £150 per acre." I have also seen statements of land renting for 5 pounds, aye 10 pounds sterling, for grazing alone. I have seen machinery an a large estate below New Orleans, which cost $30,000, no cost including for buildings.

Admit that the products of a farm in those latitudes pay a better price and thus are the holders enabled to make such expenditures, or investments, and what alters the case? Take Mr. Nobody's farm of 500 acres, with 200 only in cultivation, the residue getting poor, *almost* as fast as the tilled land, and put thereon, admit, only a fence, let us count the cost. Put land square, and it will take 8 miles of fencing to inclose 320 acres, 1760 yards in a mile multiplied by 8 equal to 5280 yds, multiplied by 4, which will give 21120 rails, and bare in mind, kind reader, the number of yards in length multiplied by 4 will give the number of rails required to make a fence 10 rails high, with five feet worm, which at $1 per hundred for making, hawling and putting up will cost $211. If done with your own hands, taking a fellow who is a good axe hand, but not a cotton picker, and worth $15 per month, or the rate of 180 per year, it will take, say 18 days, at about 120 rails per day; then hawling, putting up and cutting out fence row, I guess, only a month to hawl and a month minus 5 days to clean out fence row, and to put up, it will take 2½ months, say 3 months, equal $45, or double it for hawling rails around woodland a distance; making $90, and add for feed of team, wear and tare, interest &c., and $85 more, making full payment at $175. Who will dare affirm that woodland will not be enhanced in 6 years, if fence lasts no longer, to the value of 60 cts. pr. acre, or 10 cents per year, or if land be worth $5 per acre not to increase in value 2 per cent? Look at these figures my brethren, and I dare you to the answer, and then will you falsify your best judgments by wearing out tilled land only to be getting poorer—beautiful fact!

Again, where are there 300 acres, which if under a good fence will not keep in good condition some 8 months in the year enough horses, or cattle, or sheep, or hogs, to pay 25 per cent on investment; the fencing truly

paying in the 6 years the prime cost, and interest on the same. But land not to be stocked so as to injure, bearing in mind 2 acres of *good pasture* are allowed to each cow or horse, and therefore not over 30 head of cows to 300 acres, and they not all the year, occasionally there may be 60 or even 100 for a short time.

But this is only one step. If planters will only see their way and take this step, they are safe; because every man who desires to live where he now stays, will find he can rear his own meat, cows, wool and colts within his own encloseure, and at less cost. Let us see. I can refer to note book, and give exact dates and numbers, for such a note book I have for 21 years of my planting life, but no need. I turned out, say 90 head of pigs, 3 and 6 months old, all castrated, marked, and the older ones spayed. This was done after planting corn, say in 1841—of these after all that expense, admit no more, I killed 15 hogs December, 1843. This year in January, I had 91, killed 7 for eating, and now 83, one having died, and 2 old sows from spaying in August. I suppose these may have eaten as much more as those usually turned out in the woods, and so I have 90, out of 91 at less than half cost what I had in 1843, 15 head. I need not remind my fellow citizens that I have no calling by which I realize one dime except by what is legitimately farm matters, therefore I cannot design to induce them to do an error.

The great arator of Virginia, John Taylor, the author, some 40 or 50 years ago, proved this matter, and I do not touch his argument, nor desire to more than draw attention, only desiring to be useful by alluding to evident facts.

And one step further. When you, my brethren of this latitude, shall have gotten up your stock and see what you have gained in them; in your land, from becoming grown up with grass, weeds, and underbush, clearly evincing improvement, you would then plow up well an harrow 5 acres of good land and sow on it 10 or 12 pounds of clover seed—68lbs. to the bushel, or if thoroughly wetted with brine by sprinkling, you can rely on a good stand, 1 bushel to 10 acres, the month of September or October. These 10 acres will take 70 or 80 pigs from January to 1st of July, and keep them in better condition than will 2 bushels of corn per day, or 360 bushels, or $18 per year rent on the 10 acres, and the land better for corn or cotton the preceding year. And you will be certain to have a pasture of—aye—of Bermuda grass, which like my friend the tory pea, is abused for the strongest thing of all—being too good. I court no controversy, but if wrong in any of this I wish to be put aright, and to be sincerely yours, Mr. Editor and friends.

M. W. PHILIPS.

☞ To preserve meadows in their productiveness, it is necessary to harrow them every second autumn, apply top dressing and roll them up.

[FOR THE AMERICAN COTTON PLANTER.]

DIVINE ORIGIN OF AGRICULTURAL LABOR.

MR. EDITOR:—It is generally believed that everything on earth is made for the use of man—a sentiment not more proud, selfish and exclusive, than false; if, by it, be meant that *his advantage* and *enjoyment alone* have been consulted in the formation of the world.

"But though the Creator, doubtless, regarded the well fare of each class of his creatures, when he called them into existence, and in this point of view they may be justly said to have been created for their own sakes, yet He has so united all the classes together, as to form one great and harmonious whole, and by most wonderful adaptations, has so beautifully adjusted all the relations both animate and inanimate, that every thing may, in a certain sense, be said to be created for all the rest."

In this sense, the belief applies, with peculiar force, to man, the most noble and the most sensible being on earth. He, we are told, was created after the image of his maker, and to him, was given the "dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over the earth, and over every thing that moveth upon the earth." He, a mere child originally, was as ignorant of the manner of obtaining the means of subsistence as the beasts of the field, and the fowls of the air that surrounded him. Placed in the *Garden of Eden*, he was commanded "to be fruitful, and multiply and replenish the earth and subdue it." Like them, he too, as it were in a wilderness, untouched by the plastic hand of man, was fed by his Creator, by all that was necessary for human subsistence. Adam was told to dress and keep the Garden, and to partake freely of everything in it, except of the fruit of the tree of knowledge. Our first parents then, had only to rove over the Garden and live on delicious sweets. They had neither to sow, nor to reap, nor to gather into barns; everything was prepared for them. But they disobayed, and after the fall, the Lord said, "cursed is the ground for thy sake." He was sent out of the Garden "to till the ground from whence he was taken." The sentence was passed upon them, which included at once a denunciation, a permission and a command, "in sorrow shalt thou eat of it all the days of thy life; thorns and thistles shall it bring forth to thee; and thou shalt eat the herb of the field; in the sweat of thy face shalt thou eat bread, till thou return unto the ground."

We are told, Cain was a tiller of the ground, Abel a keeper of sheep, and Jabal a herdsman. Hence we may say, was the origin of agricultural labor, and the love of it in his descendants, handed down from generation to generation, to the present time. But the wickedness of the world caused the flood, and every thing was destroyed except Noah and his ark, and every thing it contained.

After the flood, the Lord promised Noah not to curse the ground, or smite his creatures any more for man's sake, and "while the earth remaineth, seed-time and harvest, and cold and heat," &c., shall not cease. Noah he-

came a husbandman, and cultivated the vine and made wine, and drank it, and got drunk.

According to the Bible, Adam was perfect, and endowed with rational powers, and made master of the universe, and supplied with all the necessaries of life.—Even after his disobedience, the goodness of God was manifested to him by providing him with the means of subsistence, and rewarding him according to his industry.

By the destruction of the world, the art of agriculture was not lost, but was resumed by Noah and his descendants, and from that time to this it has continued to improve; and no doubt will continue to advance as long as the world stands.

Was it not for man, and without his concurrence, or asking, that nature, or an all wise Providence, made this earth?

Is it not for us that the seasons continue and refreshing showers cause the gardens, the orchards, the fields and forests to abound in blessings that would be lost did we not make good use of them?

Let us not then remain insensible to so much kindness, and forget our responsibility to the *one* who bestows them upon us.

N. T. SORSBY.

Forkland, Ala.

[FOR THE AMERICAN COTTON PLANTER.]

ROTATION OF CROPS.

"Wheat, rye, oats and barley, should never follow each other in a course of rotation; there should always be an intervening hoe crop between them."—*American Farmer—Southern Cultivator.*

The necessity of a rotation in crops, is perhaps one of the first agricultural truths which suggested itself to the human mind. Experience, which is the best teacher in agriculture, as in everything else, must have taught it at a very early period in the history of our world. And yet, even in the middle of this nineteenth century, there are many intelligent agriculturists, who have not yet fully appreciated the simple truth announced in the quotation at the head of this article. And while they admit, in theory, the great importance of a systematic rotation of crops, there are thousands of farmers and planters in this our own Alabama, who strain their fields, almost to exhaustion, by one crop of cotton or of corn after another, merely because the soil happens to be fertile and will produce a larger return than other portions of the farm. Well, there may be *present* profit in the operation; but it is at the expense of *ultimate* loss.

But I did not set out, Mr. Editor, to inflict on your readers a regular-built essay on the subject of "rotation," important as it truly is; but simply to communicate my very small experience, in this connection, as to two of the several mentioned in the above quotation—oats and wheat.

Many years ago, in South Carolina, where I then lived, I had a field which was old and so exhausted that, with good cultivation, it produced me just about five bushels of corn to the acre—pretty low down, you'll readily admit. The only agricultural work I had read, or even seen, was Taylor's Arator. In that, I had seen that an easy and valuable means of improving land was to turn under, with a mould board plow, whatever vegetation might happen to be on it. Well, the only difficulty with *me* was, that *my* field was so poor that there was almost nothing to turn under. There was, however, a thin surface of vegetable mould—I was going to say, about the thickness of a common table-knife blade—but I am afraid that would be praising my land a *leetle* too high, and I will just say, it was thick enough to be visible. I'm not joking, Doctor—its true as preaching. Determined to try the experiment, as soon as I could get my nubbins hauled out (and it was'nt a very tiresome job) I set two turn plows to work, breaking the ground as deep as could be done in the latter part of October and first of November. It was well done, and *when* done, the field looked like one mass of red clay. A less hopeful man than I, might have thought the land was ruined.—I, however, thought *that* had been done before. Well, I let it lie in this condition until the next February, when I sowed it down in oats—plowing in with a bull-tongue. As good a crop as could be reasonably expected from such land was cradled the next summer. In October following, the field was again turned over in the same way, and again in February it was sown in oats. This crop was, I think, rather better than the first. A third time the same process was gone over, with an improved crop of oats. The fourth year I planted it in corn, and *mirabile dictue!*—it produced twenty bushels to the acre!—Candor, however, requires me to state that it never did the like again—at least not under my administration.—I was getting as poor as my land, and a few years after this *prodigious* experiment, I pulled up my stakes and emigrated to Alabama, where the second experiment, about to be detailed was, more recently, made. This time it was wheat. I had raised a good crop of wheat on a field of as good valley land as any in Talladega county; and not knowing that it was improper to sow wheat on the same land two years in succession, and having an overseer who had as little sense as I had myself, the same fields was again sowed the next year in wheat.—Some of my better informed neighbors told me, in advance, that I would make no wheat; but I didn't believe them. They were nearer right than I was—*I made just three bushels to the acre!* I have never done the same thing since, and I never will.

Now, Doctor, I don't suppose that in writing this communication I am advancing the cause of Agricultural improvement in any degree, because I presume every practical farmer has learned, long ago, that his land may be improved by turning under the vegetable growth in the fall; and I suppose few of them are as green as I was when I sowed two successive crops, of wheat on the same field. But I vehemently desired to clap you on the

back and cheer you on in your noble enterprize, and I thought I would give in my experience by way of introduction. Go ahead, Doctor, and may the people go with you.

CLOD THUMPER.

DEMOPOLIS, Marengo Co., Ala., March 25, 1853.

DR. N. B. CLOUD—*Dear Sir:* The March No. of the American Cotton Planter came to hand yesterday, and I have read every article in it, and can say, were there no other issue to be made, I am well paid for my subscription. I am a new beginner in farming; have just purchased a farm, rather thin, but with a "good foundation." Some of my land is rolling, some gravelly, some red stiff clay, some black stiff land, and some light sandy land. I write this for your advice upon the best system of rotation for such a farm in the South.—By giving your advice either in your next issue or any during the year, you will confer a great favor upon one of your subscribers.

Y. A.

P. S. I have many other questions to ask but I fear to weary you. I pursue a system of improvement, in the way of composting, I think new in this country upon which, if you wish, when I get bold enough, I will give my views and plan.

Y. A.

The above letter from "a new beginner in farming," shows the right kind of spirit. No man will improve a plantation in the production of cotton or any marketable crop, who does not adopt a fixed and judicious system of rotation, and shift of crops. Marengo is one of the richest counties of our State, and admirably adapted to a proper system of tillage. Our correspondent is doubtless aware that lime, in some of its forms, must constitute the basis of all valuable and permanent improvements. We have devoted the last ten or twelve years, with much care, to the subject of rotation and shift of crops as best suited to a cotton plantation. We have conceived the idea, that no one that tills the earth is capable of producing such varied and valuable crops as the American cotton planter, and as such he only needs a proper system of rotation to enable him to produce any amount of cotton, and all the necessaries of life abundantly besides, and yet improve the fertility of his land. We shall have occasion very soon to discuss this subject in another connection, which we shall do fully.

Our correspondent "Y. A." need have no apprehensions of wearying us by asking any question connected with the subject of agriculture. It affords us pleasure thus to converse with our agricultural friends, and if we shall fail to answer satisfactorily at any time, we doubt not but some of our correspondents will be able and willing to furnish the necessary information. We hope our friend "Y. A." will soon make a bold and efficient soldier in the cause of agricultural improvement.

The cotton planters of the country need a great deal of information on the subject of making manure. Few have yet found out (and surely those have not that feed in the roads, or leave their manure lots on the branch side,) that well fed and comfortably housed stock not only pay back in full, in the highly valuable materials they furnish for composting, but pay a handsome premium on the capital thus expended.—[ED.

[FOR THE AMERICAN COTTON PLANTER.]

Rail Roads—No. 2.

Alabama as a State is entitled to very little credit for anything which she has yet done in the way of internal improvement. Although the elder and and more wealthy of the South-western States, her capital has furnished but a moiety of the means thus far expended in rail road construction within her limits. To the untiring energy of a few individuals we are indebted for the Montgomery and West Point Railroad, one of the most strictly private enterprises, as regards its dependence upon corporate or State assistance in the Southern States. The citizens of Mobile have also displayed a highly laudable spirit in their united efforts in behalf of that gigantic work, the Mobile and Ohio Railroad, but a small portion of which, however, is within the limits of the State. Selma, too, must not be overlooked, having for her Tennessee Railroad an interior private subscription, perhaps equal to that of any work of similar magnitude in the Southern country.

We have in Alabama 87 miles of Railroad in operation between Montgomery and West Point, which, with the portions of the Mobile and Ohio, and Charleston and Memphis Railroad in North Alabama, now completed, with the 55 miles in operation from Selma to Monticello, will give us 226 miles of completed road, about one fourth as much as Georgia and not near half as much as South Carolina. Although this amount will be much extended in a few years by the completion of the works now in progress, yet when the Mobile and Ohio and the New Orleans, Jackson and Great Western Railroads are finished, Mississippi will present more miles of Railroad than any of the South-western States, particularly if the Vicksburg road, as is contemplated and much to be desired, should be extended Eastward, in the direction of Montgomery, to the Alabama line.

Perhaps in no part of the Southern country has the stimulating effect of Railroads upon the value of real estate been more successfully demonstrated than upon the Montgomery and West Point Railroad. The pine region upon the line of this road from near Notasulga to Opelika, which was described to the writer in 1835 as a country "so poor that the Indians would not live upon it," is now densely settled with four prosperous villages in

the space of 20 miles, the lands readily commanding from $8 to $12 per acre, or about 100 per cent more than that of a similar quality 15 or 20 miles from the road. Now take a parallelogram 20 miles in length by 15 in breadth, or seven and a half miles on each side of the road, and it will contain 192,000 acres. Put the enhanced value of this at $3,50 per acre, which, including the village property is certainly a moderate estimate, and we have $672,000, or nearly three times the cost of the road, for this distance. Say that for 20 miles from Montgomery the Railroad does not effect the price of land; we should then have 67 miles subject to enhanced value. Say that this appreciation, making allowance for poor timbered lands, which are never valueless upon the line of Railroads, should represent but $2,50 per acre, this would give for the width of 15 miles $1,608,000. This is several hundred thousand dollars more than the cost of the whole 87 miles of Railroad and equipments. If the influence of the work upon the value of town property at Montgomery was also to be estimated, it would swell the aggregate to more than double the cost of the road.

But we wish at this time to consider the value of Railroads solely with reference to the interest of the planter and landholder. Any one who will compare the present with the past condition of South Carolina and Georgia, will be struck with the rapid progress which has been made in agricultural improvement in those States since the introduction of Railroads. The depopulating tide of emigration which set so strongly from portions of those States, some 15 years ago, has been arrested to great extent. The man who lives within sound of the locomotive whistle cannot readily be reconciled to sell his possessions, merely to obtain cheaper and better land in a remote wilderness. Consequently he will seek to improve his land and erect comfortable buildings, &c., not only with a view to the preservation and enhanced production of the soil and the greater comfort of his family, but because he feels assured that owing to the eligibility of his position, it will be practicable at any time, whenever he or his children after him may desire it, to effect a sale of his property at a remunerative price. In this latter respect he acts upon the principle of the man who will spend but $500 or $1000 on his plantation dwelling, but will freely invest thousands on a city residence, not because he absolutely requires such an expensive habitation, but because it is convertible property, which will command a return for the monied outlay by sale or rent. This motive may not be recognized in olden countries, but it certainly has great force with our migratory and trading people.

Apart from this, however, the Railroad has a very direct agency in the work of agricultural improvement. All the imported stimulants of vegetation, such as guano and its compounds, as well as such calcarious manures as may be supplied from other States, or prepared at home must be dependent in a great measure upon Railroads for their use and generel distribution. The existence of guano in such inexpressible quantities, and the highly concentrated nature of its invigorating principles, gives it peculiar adaptation to agricultural purposes, and promise immense advantages to those who can avail themselves of its use by their proximity to navigable streams and railroads. The influence of Railroads upon southern agricultural economy, even in those sections most open to their advantages, is yet but partially felt. It will increase, and it will react. Railroads will beget agricultural improvement, and agricultural improvement will multiply and extend Railroads.

That Railroads will pay in the south, merely for the accommodation of an agricultural region, without regard to through travel, is now clearly established by the success of the Central Road in Georgia, as well as the upper country roads of South Carolina.

The fact that such roads will pay 7 and 8 per cent, dividends, should encourage our planters to invest in such undertakings and lend a vigorous hand in their construction. It is a common error to suppose that the commercial terminus is the recipient of the greater share of benefit. As trade is increased those who share that trade are increased, and the enhancement of property at the one point will not nearly equal that which is effected in the value of lands upon the whole route. Our planters look too much to the towns and cities, not only for the initiative step, but for the entire execution of such enterprises. Cities have this advantage—their collective intelligence and resources can be readily brought to bear and to act. But the solid means of the interior is infinitely greater. It also can be conveniently extended to act collectively either through the agency of the State,

or, as in Mississippi and Tenneesee by county subscriptions.

Unquestionably the enhanced value of the real property of Georgia and South Carolina is fully equivalent to the whole cost of their rail roads, independent of the stock investment. In Alabama it is thus far the same. The investment therefore pays two fold, the dollar is returned, or produces its value by the earnings of the road, and is at the same time added to the realty or landed interest of the country.

Yours truly, Alfred Dexter
A. A. D.

Montgomery, April 21, 1853.

[FOR THE AMERICAN COTTON PLANTER.]

POLICY OF THE PLANTING STATES.

Being strongly impressed with the pernicous results of the general system of policy pursued in the cotton planting states, I am induced to send you some observations upon the subject, with the view of bringing it to the consideretion of the public, and in the hope that it may lead to its reformation.

These States posess within themselves, equally with other portions of the Union, all the elements of social and financial prosperity. They have a temperate and healthy climate—a soil of great variety—a very large portion of it naturally fertile, and nearly all of it capable of being made so ; and adapted to the widest range of production. They have an extended sea coast upon the Atlantic Ocean, and the Gulf of Mexico ; fine navagable streams with their sources in the mountains of gold, iron, and coal ; abundance of limestone and marl, besides other minerals which contribute to manufactures and agriculture. They have, in common with the other slave-holding States, the cheapest and most available labor in the world ; and, in addition to these, they produce almost exclusively a staple, which, next to food, is the most necessary to the comfort of the human race, and enters most largely into its consumption.

Now with all these advantages, what ought to be our condition? I do not think I am extravagant, when I say it ought to be one of very great prosperity. With abundant and cheap labor, our lands under culture with their natural capabilities, aided by the artificial appliances at our command, ought to be in the highest state of fertility and productiveness, yielding, in profusion, grain and provisions for our own consumption, besides abundant crops of cotton to exchange with other countries for the commodities and luxuries our own does not produce. Instead of this being the case, our soils are actually in a state of gradual impoverishment, and it may be safely affirmed, do not yield more than a third, or a half at most, of what they are capable, under a proper system of culture. In no other portion of the United States does agriculture exhibit so unsightly an aspect as in ours. Our fields, instead of being protected by durable and ornamenial fences, are still enclosed by the ugly and expensive one of rails. Our hills are washed, wasted and gullied ; our plains often saturated with water ; our swamps and ponds undrained; our dwellings, barns, stables and negro-quarters with rare exceptions of the lowest grade. And we may add to this, that our agrieulture is also a fair specimen of every other department of industry amongst us.

With the richest depoits of coal and iron ore, these two most potent of all the elements of manufacturing industry, we do next to nothing in mining.

We have here and there an iron foundry, and we have a few scattered manufactories of coarse cotton and woolen goods, and with these and some other inconsiderable exceptions, we have scarcely any thing worthy of the name manufactures. For at least nine tenths of all the manufactured articles we consume, from the hats on our heads, down to the simplest and commonest implement of industry, we are dependent upon others. We have idle villages where we should have thriving towns, in which all these articles should be fabricated by our own people, and we have a sparse population, and because we have little variety of occupation, and therefore slender inducement for any other immigation save that of slaves.

This is a mortifying statement of our condition, but it must be admitted to be a true one. If it is, does such a state of things result necessarily from any thing in our social or physical condition ? I am convinced that it does not, and I believe it is capable of demonstration that the reformation of some errors and defects in our system of industry, is all that is needed to give us a prosperity equal to that of any people in the world.—The limits of an ordinary essay will not allow me to discuss these in detail, or the benefits to be derived from the changes I propose, and I cannot do much more than suggest those which are the most obvious and important.

The first error to be corrected is the planting of more land than can be cultivated and at the same time improved. Such a system as our does not exist in any other part of the world, and there is not a soil on earth that it would not reduce to barenness. We have undeniable proof of this under our eyes. The Alabama bottoms, thirty years ago, in many instances did produce a hundred bushels of corn, and even more, to the acre. I doubt if the same lands would now produce much more than a third of that quantity. Any system of culture which thus abuses the bounty of Provipence must be erroneous and unwise, and should be abandoned. The evil I think would be remedied by reducing by a third or half the amount of land we cultivate in cotton. Such a reduction would entail an apparent sacrifice for a year or two. But while I believe there would be no real sacrifice, I feel sure that thereafter there would be a regular progression in improvement of the soil and in pecuniary return. Such a reduction would enable us to

apply at least one fourth of our labor to manuring, and bringing our lands up to the maximum of productiveness; to ditching superfluous water from our hill sides and bottoms; draining swamps; converting pestilential marshes into meadows; building good houses for ourselves and slaves, barns, ware-houses, stables for horses and cattle; raising stock and provisons in abundance; making gardens and orchards, good roads, fences gates and fixtures of all kinds; and in a few years doubling and trebling the production of our land, and enhancing its intrinsic value from ten or fifteen dollars an acre—its present price—to fifty or even a hundred dollars which is now the rate of improved land in the northern and middle states. The adoption of this system would improve the general face of the country and increase its healthfulness. We should have pleasant homes, free from the malaria of swamps and ponds which now renders so many of them uninhabitable. With fixed and improving homes, the comforts of living would be more appreciated; our people would become more attached to the soil and deprived of the inducements to emigration.

In addition to an improved system of agriculture, we should adopt the most vigorous measures to encourage the establishment and growth of every kind of manufacture suited to our circumstances. The first and the most effective of these measures would be to prohibit the farther introduction of slaves, except such as might be acquired by actual residents, through inheritance or marriage, or such as might be brought in by *bona fide* emigrants settling amongst us, and with the restriction, that they should not be sold or hired for a term of years, unless under process of law. One great and beneficial effect of this measure would be to stop the vast drain of money which we now expend for slaves, and consequently the rapid accumulation of abundant capital at home. This accumulation of capital would reduce the rate of interest, while at the same time it would enhance the value of property. New investments would be sought, and these would be found in mining, in manufactures, and improvements of every discription. With abundance of money, a low rate of interest, and little cost for living; with superabundant water power almost everywhere, and coal and iron equal to any in the world, we should unite all the requisite conditions of success, and in a great variety of productions we might compete successfully with the world. In the article of cotton alone, we ought, absolutely, to monopolize the manufacture of iron and Machinery. What we now achieve under very unfavorable circumstances, proves very conclusively what we might accomplish, with money cheap and abundant, aided by the other favorable conditions I have mentioned. As an illustration of these views I will refer to the recent experience of our sister State of Georgia. She prohibited the introduction of slaves, for ten or twelve years succeeding the great financial revulsion of 1837, and though that revulsion was quite as disastrous to her as to any of her sister States, she, in consequence of this policy, quickly recovered, and to that measure, more than to all others, is to be attributed the great advancement she has since made in internal improvements, and manufactures, and which has placed her so far in advance of all the cotton growing States. By one of those caprices of legislation, to which our law makers are unfortunately so liable, she repealed the restriction a few years since, but she has had the sagacity recently to adopt it again, and I hope never to be again abandoned.

But independently of these *financial* advantages, there are *social* considerations connected with this subject of the most serious import. The institution of slavery itself is assailed by the whole civilized world. Against such an array of moral and political power, we can hope to maintain it, only by retaining in its defence the moral and political power of all the present Slave-holding States. But Maryland, Virginia, North Carolina, Missouri and Kentucky have been for a long period gradually diminishing the proportion of their slave population, by exporting large numbers of slaves to the cotton growing States. In all of the States I have named, recent developments have shown the existence already of a strong Abolition sentiments, and if the process of diminution in them, and augmentation amongst us, is permitted to go on for a few years longer, it is difficult to anticipate any other result than the abolition of slavery in them, and a dangerous and unmanageable accumulation of it amongst us. It is therefore not only the most infatuated folly, but it is absolute madness in the people of the cotton growing States to allow this process to be longer continued. Let us therefore arrest it at once and we may retain slavery in all the States in which it now exists, and have their whole political power united in its defence. But let the present state of things continue, and much sooner than would be otherwise even dreamed of we shall have one half of them arrayed in deadly opposition to the other. Arrest this process, and we will not only avoid this fatal calamity, but we will perpetuate slavery for an indefinite period. We will make it more beneficial by keeping it more equally diffused, and preserving everywhere throughout the South the necessary equilibrimum of the white and black population. In the existing condition of the two races, slavery is the only relation which the black one can occupy to the white, with safety to either, and to make this relation stable and secure, a proper equilibrium between them must be maintained. Destroy this equilibrium, and what would be otherwise a most beneficial agent becomes in every aspect an unmitigated evil.

There are some other measures of minor consequence to these which might also be adopted to give efficiency and completeness to this system of policy. But if the policy itself shall be adopted, they will follow as necessary consequences, and therefore need not now be specified. My object, at this time, is only to call attention to a general consideration of the subject. I am under the strongest conviction that a change of system is not

only necessary to the prosperity of the cotton growing States, but is absolutely essential to their safety. I believe the adoption of such a one as I have indicated would put a new face upon the country. Our agriculture, instead of a desolating curse, would cause our land to smile with beauty and fertility. The financial, the social, and the moral well being of all connected with it would be promoted. The vast surplus of our production, instead of being exported to the slave-selling States for more slaves, and thus actually buying future ruin with present disadvantage, would be invested in useful and valuable improvements amongst ourselves. Railroads would be built wherever needed, with our own funds; manufactures of great variety would be established and multiplied throughout our land. Our mines of iron and coal would become the sources of a vast production. A valuable white emigration would be induced into our borders, our little villages would grow into populous towns, teeming with merchants, manufacturers, mechanics, requiring for their consumption immensely increased amounts of every discription of agricultural produce; labor would be diversified and varied by a thousand new employments, all acting and reacting beneficially upon each, and each upon all. The result of which would be that all property would be enhanced in value, and fixed in a condition of security and stability; prosperity would pervade all classes of our people, and there is no degree of advancement we might not justly hope to attain. While I solemnly believe that our present system persisted in can lead to nothing but poverty, debasement and ruin.

S.

Horticulture.

From the Southern Agriculturist.

THE ORCHARD.—NO. 3.

THE APPLE.

The apple succeeds well in most sections of the country, and with proper cultivation yields regular and bountiful crops. It is a vigorous, hardy tree, and will grow upon most soils, but thrives best in a good loam, with clay subsoil, as a porous subsoil is often unfavorable.—Some varieties do best on a deep, sandy loam, and early varieties usually require a warm, dry soil, which hastens their maturity, while others flourish best in strong, moist loam; and late kinds require a cool soil to retard their ripening. For this purpose we have found mulching with leaves, pine-straw and such material, of great benefit; when applied after a good season in midsummer, the fruit will mature more gradually and in better perfection, and will keep better during winter.

Upon the whole, the apple is one of the most valuable fruits; other kinds are more luscious and delicate, but these qualities render them transient, while the apple endures and may be had in excellence throughout the year. Various other fruits when duly attended to will assume far more comparative importance. Yet the apple, from its hardiness, easy production, great excellence, and being always in use, both fresh and dried, will, in the main, hold a decided superiority over any other species. In spring, it is a beautiful tree, with its blossoms of white tinged with red, and some of the varieties are highly ornamented with their showy double flowers.[1] Cole, in his Fruit Book, thus admirably sums up its uses:

"The fine kinds are excellent for the desserts. Besides the pleasure of this luxury, and nutriment in rich apples, they have an excellent medical effect. They are greatly laxative and keep the system in a good condition. They serve as a healthy repast for children, who would often be eating something that is injurious from too much nutriment.

"Apples are cooked in various ways, and may at all times form one or more dishes on the table; stewed apples are an excellent sauce; frying in a pan after meat is a fine preparation. (Though fried with butter we think they are still better.) They are excellent in dumplings. Sliced sweet, or mild apple, in Indian and other puddings, are better than raisins, and so they are in boiled rice and in warm Indian bread. They make fine pies and tarts. A *dowdy*, or big pie, makes a meal for a whole family. They may be made into apple sauce and be kept a long time. Apple butter is a still finer dish. Caudled apples, (boiled in just water enough to cover them,) are excellent. Suitable kinds make fine preserves. Roasted or baked, they are good without further preparation;" and to our good clean housewives, we need not tell them that they make an excellent jelly.

Apples, under proper feeding, are valuable for all kinds of stock. We not only give them freely to our hogs, but feed them to our milch cows, and frequently to our horses; all seem to thrive upon them, and always eat them with good relish; and we would advise all our good housewives to make a plentiful supply of good cider vinegar, which is better, and much more preferable to a great deal of the vinegar sold as White Wine Vinegar, often a composition that has never touched a seaport.

The apple is admirably adapted to the upper regions of the Southern States, where it thrives in great perfection, and many choice varieties have been produced.—Among those which may be named is the *Aromatic Carolina* and *Ferdinand*, both produced here. The first being a very superior Summer fruit, and the other ripening in October and keeping till March, of large size and superior flavor. The *Carter* apple, scions of which have been sent us by Dr. N. B. Cloud, of La Place, Ala., and from Col. Carter himself, through the Rev. Mr. Moultrie, of Chunnenuggee, Ala. It is discribed as of medium size, excellent flavor and a remarkable good keeper. The *Davis* apple, sent us by our friend E. J. Capell, of Miss., is valued there for the same good qualities. The *Callasaga* and *Nickajack*, two valuable native apples, recently brought into notice by Mr. Silas McDowell, of

Macon County, N. C., with several others which have received the notice of the Fruit Committee of the South Carolina Agricultural Society, at their last meeting in Macon—all deserve to be extensively propagated. The *Murray*, from having tasted it, we would particularly recommend—indeed we must look to our choice native apples for good winter fruits—the most of the winter varieties from the North ripening too early to keep during the winter. With a little care, a selection can be made that will furnish a supply of this wholesome fruit.

We have given directions as to propagating by grafting in an other article, and in a preceding article, we have given particular directions for transplanting. The land should be kept in good condition by culture and the proper kind of manure, as no tree can be expected to produce good fruit if neglected.

Our soils are mostly deficient in lime, and for this reason it should be liberally supplied.

[This deficiency of lime rarely occurs in any locality in Alabama.—*Ed. Cotton Planter.*]

The following table shows the inorganic matters in the apple:

Analysis of the Ash of the Apple.

	Sap wood	Heart wood	Bark of trunk.
Potash	16.19	6.620	4.930
Soda	3.11	6.935	3.285
Chloride of Sodium	0.42	0.210	0.540
Sulphate of Lime	0.05	0.526	0.687
Phos. of peroxide Iron	0.80	6.500	0.375
Phosphate of Lime	17·50	5.210	2.425
Phosphate of Magnesia	0.20	0.190	
Carbonic Acid	29.10	36.275	44.830
Lime	18.63	37.019	31.578
Magnesia	8.40	6.900	0.150
Silicia	0.85	0.400	0.200
Soluble Silicia	0.80	0.300	0.400
Organic Matter	4.60	2.450	2.100
	100.65	104.535	111.450

Supply potash in wood ashes; soda in common salt; phosphate of lime in bones; carbonic acid in charcoal and manure from animals; lime in lime, old plaster, chalk, bones hair or horn shavings; magnesia in this salt or magnesian lime.

The apple is subject to the attacks of several insects—the *caterpiller*, the *borer*, the *canker worm*, the *blight*, and the *bark louse*. For eradicating the last named troublesome insect, we would refer the reader to the preceding article.

The *caterpiller* some seasons do immense injury, taking the entire orchard. The best mode of destruction is to cut off in winter the branches upon which they have deposited their eggs, and burn them. Every nest of eggs thus removed, which is done in a few seconds, totally prevents a nest of caterpillers in the Spring—but when these appear, no time should be lost in cleaning the trees of them. Soap-suds, to which some salt has been added, and applied by means of a swab at the end of a pole, is the best method to rid trees of them when they have made their appearance. Tobacco water is also recommended as a good remedy.

The *borer* (saperda bivittati) is an insect which enters the tree at a bud, and cuts into the solid wood, frequently doing immense damage. The first indication of its presence is the appearance of small, round holes.—These holes will soon become more visible by the ejection of dust—and it will be found necessary to cut off the affected parts in young trees, below the entrance of the borer, in order to save them, or they may be destroyed by running a piece of wire into the hole; but as prevention is better than cure, we would advise the tree to be kept smooth and clean, and well washed with some alkaline solution, to which add a little sulphur, tobacco or other offensive matter. The insects would then be prevented from harboring, if this wash was applied in June, July or August.

The *apple worm* or *codling moth* (corpocapsa pomonella) was imported from Europe. During the latter part of May and June, these moths lay their eggs in the eye or blossom end of apples, sometimes in early pears. They hatch in a few days, and the worm eats into the apples, and in a few weeks attains its full growth. The apples ripen and fall prematurely. Soon after the apple falls, and sometimes before, the worm crawls into the crevices of the tree, or other places, spins a cocoon of a white delicate web, where it remains until the next season.—It is quite probable that with us it comes out and produces a second generation. The only remedy that is available is to let hogs run into the orchard and eat the fallen fruit, and when it is practicable to pick up the fruit as it falls, and destroy the worms. Lay old cloths in the crotches and around the trees, and many will crawl in and may be caught. By scraping off the bark in spring many will be destroyed.

The *canker worm* (anisoptery pometaria) affects the apple, the quince, mountain ash and hawthorn. One of the principal remedies which has been tried, is to prevent the female from ascending the tree to deposit her eggs, but none have yet been discovered of easy, safe and effectual application—one of the best is to encircle the tree with a canvass belt, coated with a mixture of tar and train oil, to be renewed several times. Applying the tar directly to the bark of the tree is injurious. India rubber dissolved in whale oil over the fire will last a long time without renewing, and is equally as effectual as tar. A species of *a his*, often infesting young trees, is destroyed by whale oil soap, and by lime wash.

The *blight* which sometimes kills the terminal shoots of the branches, has been variously ascribed to the sting of an insect, and to the effects of the weather. The cause does not appear to be satisfactorily ascertained. It rarely proves a formidable disaster, although trees are occasionally very much disfigured by it, and temporarily checked in growth. We have always cut off the branches and burned them when thus affected, and the disease ceased.

We would recommend the following varieties for general cultivation in this latitude, having fruited them and tested their qualities.

1st. *Early Harvest*, the best early apple, as it is of fine size, juicy, of a pleasant sub-acid flavor, excellent for cooking and eating. It seems to be well adapted to a warm, rich soil; ripe from the 25th May to the 15th of June.

2d. *White Juneating*, small pale yellow, sometimes, when exposed to the sun, a faint blush; flesh white, crisp and pleasant; early in June and a great bearer.

3d. *Carolina Red June*, is one of the best early apples; in favorable locations frequently large; oblong, deep red when exposed; rather acid; excellent for tarts; ripens early in June, and continues for several weeks.

4th. *Red Astraction*, like the preceding, is often quite large, the whole surface frequently of a deep crimson; flesh white, crisp, and in favorable seasons, of a pleasant sub-acid flavor; ripens a few days after the early harvest; excellent for cooking, and should be in every collection.

5th. *William's Favorite*, large oblong, bright red; dark red in the sun; flesh yellowish white, fine, mild, pleasant and excellent; ripens during July; moderate grower, and a great bearer.

6th. *Summer Pearmain*, roundish, yellow, mostly marked with red; flesh very fine, tender, rich, aromatic—with us has no superior; continues to ripen through July.

7th. *Early Strawberry*, of medium size, roundish conical; smooth, yellowish, white ground, often covered with brilliant red, flesh white, tinged with red next to the skin; very tender, slightly acid, slightly aromatic flavor; ripens in July; moderate grower, and a good bearer.

8th. *Autumn Strawberry*, a fine productive variety, ripening in Summer; it is a beautiful apple.

9th. *Aromatic Carolina*, large, oblate; flesh tender, of a rich, aromatic flavor, with dull reddish stripes, covered with light bloom; continues to ripen from the last of July often through August.

10th. *Gravenstein*, large, slightly oblate, stripped and splashed with bright red on a yellow ground; flesh tender, juicy, very rich, sub-acid, high flavored; ripens from the last of July to the 15th of August.

11th. *Porter*, large, oblong, ovate, smoothe, rich, yellow, resembling a lemon; flesh fine and tender, very juicy, of a rich, excellent, sprightly flavor, and is with us, the best summer apple; a great bearer.

12th. *Garden Royal*, see previous description.

13th. *Fall Pippin*, very large, roundish; superior for the table, and excellent for cooking; ripens in August and September; requires good culture for fine fruit.

14th. *Male Carle*, This is an excellent apple of medium size, smooth lemon color; crimson in the sun; flesh white and juicy, of a delicate rose perfumed flavor. It is well adapted to this latitude, and with care, keeps until christmas. It is the finest apple in Italy, and highly esteemed in the south of Europe.

15th. *Yellow Bellflower*, very large, long, ovate conical, smooth, lemon yellow, blush in the sun, flesh tender, juicy, rich, sprightly, aromatic flavor; ripens in September; thrives well in a deep sandy loam; not a great bearer, but deserves to be cultivated.

16th. *Fameuse*, medium, greenish yellow, mostly covered with red; flesh pure white, very tender, juicy and pleasant; slow grower but a good bearer; in a cool location will ripen during October and keep until christmas.

17th. *Dutch Mignonne*, large, roundish, dull or ange, and dull red; large russet specks; flesh tender, of a rich, high aromatic flavor; ripens last of September; trees of vigorous growth and promise to bear well.

18th. *Cayuga Red Streak*, very large, roundish, greenish yellow, marbled and striped with purplish red; flesh of a brisk, sub-acid flavor; is a great bearer, and the fruit of a beautiful appearance.

19th. *Belmont*, large, skin waxen, sometimes pale yellow, brownish check, fine, tender, of a rich, sub-acid; early in autumn; a fine grower and great bearer; adapted to rather dry soil.

20th. *Hawley*, large, roundish, pale green, becoming yellow, sometimes a faint orange cheek; flesh yellowish white, fine grained, quite tender, with a mild, rich, sub-acid, fine flavor; late summer and early autumn.

21st. *Jonathan*, a beautiful, very fair, medium sized apple, and promises to be very productive, and a good keeper.

22. *Laquier*, large, oblate, somewhat irregular striped, light and dark red or greenish yellow; flesh white, fine grained, firm, crisp, mild, a gentle sub-acid, keeps until christmas.

23d. *Marston's Red Winter*, large roundish, oval, striped with bright red, and crimson on a yellow ground; flese yellowish, fine grained, tender, juicy and high flavored, and promises to be one of the best winter apples.

24th. *Northern Spy*, large, handsomely striped with red; flavor mild, agreeable, pleasant, sub-acid, and promises to be a good keeper.

25th. *Pryor's Red*, rather large; color dull, brick red on greenish yellow in dots; slightly russetted; flesh very tender, mild, sub-acid, and very agreeable. Highly esteemed in Virginia and Kentucky, where it keeps until spring, and promises to prove a good keeper here.

26th. *Rawls Jannet*, medium in size; color pale red, distinct stripes on light yellow ground; flesh nearly white, fine, mild, sub-acid, fine texture, crisp, juicy, compact, and in our climate, decidedly first rate; ripens late in autumn, and will prove a vauable keeper. The blossoms open ten days later than usual and will always escape our spring frosts. It is known also as *Neverfail*; the tree is of slow growth, and requires a good soil.

27th. *Red Canada*, medium in size, nearly the whole surface covered with red, and interspersed with large, rather indistinct whitish dots; flesh fine grained, high and excellent flavor; keeps till late in winter.

28th. *Wagener*, medium or rather large, shaded and indistinctly striped with red; deep red in the sun; on a warm, yellow ground, often streaked with russet; flesh yellowish, very fine ground, mild, sub acid, very aromatic

and excellent; ripens late.

29th. *Peck's Pleasant*, large, often quite large; smooth and regular, color light green, becoming yellow with a brown blush; flesh very tender, not good when over ripe; resembles the Newton pippin in flavor.

30th. *Rhode Island Greening*, large, roundish, oblate, green, becoming greenish yellow; always fair with a dull blush to the sun; flesh a rich yellow if exposed to the sun; tender, rich, rather acid flavor; promises to be very productive here, but requires the proper ingredients to be supplied in the soil.

31st. *Newton Pippin*, of rather large size, roundish oblique, slightly irregular, dull green, becoming yellowish green, with a dull brownish blush; flesh greenish white, juicy, crisp, fine grained, with a high, fine flavor; keeps late and retains its freshness; trees slow of growth, and the fruit falls for want of necessary constituents in warm soils; promises, with care, to succeed in cool or moist locations.

32d. *Swaar*, rather large, slightly flattened at the ends, color greenish yellow, becoming a rich yellow, sometimes faintly russeted; a little blush when much exposed to the sun; flesh tender, fine grained and very rich, mild, aromatic agreeable flavor; requires a favorable location and good soil to bring the fruit to complete perfection, and then it is regarded as the very best table apple.

33d. *Clark's Pearmain*, medium size, of a dull, red and covered with numerous small dots; flesh yellowish, fine, and when fully ripe, tender; keeps until Christmas; trees slow of growth, requiring very little pruning when the heads are formed; has been long cultivated, and was one of the first good apples introduced here from Virginia, by the late Philip Pearson, father of our worthy friend Dr. George B. Pearson. He first gave attention to the culture of fine fruits in Fairfield District.

34th. *The Greening*, is a medium sized apple, rather flat, of a bright green, sometimes yellowish; flesh remarkably tender, juicy, and extremely rich and delicious; was also introduced by the late Philip Pearson from Virginia.

We could extend this list to a much greater length, and have already been compelled to omit several choice varieties, which we intended to include, but want of space prevents us—at another time we will continue our notes of favorite varieties.

From the Horticulturist.

WHAT IS CULTIVATION?

BY WM. W. VALK, M. D., FLUSHING.

We like to see a garden *well* laid out and cultivated.—There is something in the contemplation of its design, the harmony of its parts, and the neatness and skill with which it is kept up, that affords a peculiar kind of gratification to every true lover of the beautiful in art or nature. But *all* gardens are *not* well cultivated. Some have no design, and are but a hetrogeneous aggregate of an absurd and preposterous fancy,—expensive it may be, but nothing more. No one portion of them is in keeping with another, though every walk and bed is scrupulously clean—this is the gardener's pride, and he "lays himself out on it" with perfect composure; for *his* knowledge of what a garden ought to be, "hath this extent, no more." Again we see design, and a certain harmony in every department, but the whole lacks that great essential, *taste*—the combination of all the elements embraced in location and surface, developed with sound and discriminative judgment. A flat surface and straight lines in the walks, the trees, the shrubbery, form the ultimatum of many gardners' ambition, and they will take infinite pains to destroy every natural beauty, in order to accomplish this most undesirable and monotonous object.

But we did not set out to speak so much of tasteful designs, and the laying out of gardens, as of their being well cultivated. The divisions of them may be round or square or oval, or of any shape or size, the surface flat or undulating, the soil poor or rich, sandy or loamy, the advantages of location and aspect good or bad, yet the question comes at last, is the garden *cultivated* with skill, and according to the best lights of scientific horticulture? What is cultivation? To the man of science there is but one answer to this question; with the superficial and illiterate there are many, and scarcely any two of these shall agree in their definition. One man removes the wild strawberry from the woods and plants it in his garden. With him this is cultivation—a mere change of place—the soil, most likely, being less suited to its growth than that from which it was transplanted. Upon this principle, whatever is in the garden is in a state of cultivation, and for no better reason than because the common operations of a whole in making up a complete system of culture, but they are not the system itself, and if nothing more were required or done, vegetation would ultimately languish, and become essentially retrograde.

Another gardener (and there are many such) transplants a small tree from a hedge to one of his garden plots. He knows just enough of vegetable physiology to reduce the head and branches somewhat, and to keep the tree exact and steady, to facilitate its rooting. This accomplished, the tree has (to him) been brought into a state of cultivation, and he expects it to grow and flourish far more rapidly and certainly than if it had been permitted to stand where it originally sprung from the earth. If it does not fulfil his expectations, the fault lay in the tree, and not in any act of omission on his part, by which the cultivation of it should have been perfected. Such a gardener knows (generally speaking,) just enough to be quite at his ease in the performance of certain duties pertaining to his calling, and to render him obstinate in receiving further enlightenment from his employer or any body else. There are such men as we very well know, capital operators with the hoe, the spade, and the rake, doing well what the hands alone may do, but without the mind and skill to give them the

only proper direction. Cultivation *has* a meaning with them, but it is very remote from the truth, and limited to certain acts of a purely mechhnical nature. There are grades of intelligence among gardeners, and we have commenced our illustrations with the lowest. Let us pass on to a more enlightened class, and see what *they* understand by the term cultivation.

If one of these men is asked for the meaning he attaches to that process by which he brings to perfection a tree, a shrub, or a vegetable, he will very properly reply that their *cultivation* embraces a knowledge of soils, temperature, light, moisture or dryness, and the application of manures. By their aid, and the use of certain implements, he adapts means to their proper ends, because he knows their relative value. By reading, reflection, observation, and diligent practice, the mind has become prepared for the reception of the truths of vegetable physiology, and by a practical application of them to the circumstances under which the tree, shrub, or vegetable is made to grow, he *cultivates* them as their several necessities require. This brings perfection if it is at all attainable, and the result is based upon sound and discriminative intelligence.

There is no such thing as a royal road to perfection in arranging and planting a garden. But one would be induced to believe it an easy matter to do either, were the opinion formed upon the illustrations met with every where of the capacity and judgment of most of the gardeners employed in the United States. There are some *intelligent* men among the number, but the larger portion are of an inferior caste, practical *workers* truly, but not men of reflection, not the men who read and reason, and base their operations upon the scientific elucidations of a progressive age, pregnant in great issues to the horticulturist as well as the mechanic and professional man.—We want that class of assistants in our gardening pursuits, who eschew that dogged obstinacy so inseparable from superficial knowledge. We want the men, who having come *from* Europe, will remember that they *are* in America, and that the soil and *climate* bear an important influence in controlling and modifying the least of their operations.

From the Southern Cultivator.

LUCERNE—ITS CULTURE AND USES.

Messrs. Editors—Twenty years' experience in the culture of Lucerne, leads me to regard it of incomparable value in this climate (36 deg. N.,) both for soil feeding and for hay. Five good crops a year, for a succession of seven or eight years, may be relied on with fair treatment. The smallest number I have cut is four, the largest seven.

Soil—Any good corn land, high or low. Mine is a deep red clay.

Time of Sowing—As soon as the ground is in plowing condition in the spring; or early enough in the fall to allow the young plants to become so well rooted as to resist the winter frost—say the latter part of August or first of September.

Mode of Sowing—Broadcast, brushed or lightly harrowed in, and rolled. I have tried drills, but decidedly prefer the former,

Quantity of seed to the Acre—The books say 10 lbs., and the seed being good, the ground well prepared, and the season auspicious, this may suffice; but my experience suggests donble that quantity.

Preparation of Ground—Deep plowing—the deeper the better—and thorough pulverization, together with liberal manuring. Liberality here is the truest economy. If sowed in the spring or late in the winter—February or March—hot, recking manure from the stables or sties should be plowed in, in the fall preceding. If sowed in the fall, this operation should be performed the previous spring, in which case a rich summer crop of something else may be taken. I have not tried guano or super phosphate of lime on Lucerne, but do not doubt their adaptation to it, especially for surface manuring, after the second or third year. Ashes and Plaster of Paris I have applied as a top dressing with satisfactory results.

Time of Cutting—As soon as the flowers appear. Cure as clover—not scattering, but suffering it to wilt, and then cocking in tall narrow-based cocks, not exceeding three feet, or at most four, in diameter, built as high as they will stand. In two, three or four days, according to the weather, turn them over—opening a little to the sun—from half an hour to an honr in advance of the wagon, and haul to the barn or stack.

The product is more than double that of clover, to say nothing of the sulivating effect of the second or third crop of the latter, from which every crop of the former is free. It is said to be less nutritious. Yet I find it for soil-feed to pigs, calves, mares and colts, as well as cows and horses, decidedly superior to clover. Cows give more milk when fed on it, and equally good; the reason for which, perhaps, is that they are fonder of it, and therefore eat more. Every change from Lucerne, to clover proves the superiority of Lucerne, both by the quantity of the milk, and the appearance of the cows.

In July and August, if dry, Lucerne fails; and

the only reliable substitute I have found, though a very inadequate one, except in quantity, is the Guinea grass.

Lucerne should be cut—never depastured. If thickly sown, it smothers all weeds, and takes exclusive possession for six or seven years, till the blue grass enters the lists. Rather than undertake the extermination of this insidious and almost indomitable foe, the eradication of which, if completely affected by the coulter and harrow, and rake and hand, "costs more than it come to," I have chosen to sow a new plat, and cultivate corn in the old one. One years's thorough culture in corn, with a good coat of manure, refits it for Lucerne.

Seed may be procured at Baltimore, Philadelphia or New York, at from 25 to 37½ cents per pound.

P. S.—If weeds threaten to smother it the first spring or summer, let the scythe be fearlessly applied.

Very respectfully yours,

W. B. BINGHAM.

Oaks, Orange Co., N. C. Feb. 1852.

Commercial Letter.

[FOR THE COTTON PLANTER.]

COTTON, PROSPECT OF PRICES, &c.

DR. CLOUD—

Dear Sir: In your March No. I stated the views I commenced the season with, and as especially submitted in my circular of 1st January, now not materially changed, though at that time (1st March) the excess of receipts of Cotton over the corresponding period of the year before, was forminable, and sufficient to shock the nerves of those who would not consider and investigate the causes of the excess. The explanation I gave for it, I still think correct, and am happy to say that the encouraging prospect I presented in reference to our great staple, and all the elements connected with it, are being fully and rapidly realised.

On the 8d March, the date of my last to you, I stated the receipts would fall off rapidly. Our excess then was about 100,000 bales above the corresponding period of last year. To-day (April 21st,(in about six weeks, there is not an excess of 9,000 bales, as Saturday's Prices Current will show. On 2d March, Middlings were worth 8½, now they are 10c. At the end of next week, there will be a decrease here from the receipts of last year, and persons who know any thing at all of the matter, will see that that decrease will be widened every week for the remainder of the season. My outside estimate for the crop then was 3,000,000 bales. It will not vary materially from it. Some points will exceed my figures slightly, I now think, while I think others will not come up to them.

So far as my humble ability and influence could effect it, I have endeavored to direct attention to the fact that the crop has been largely over-estimated, and I have wished to give confidence alike to planters and buyers of cotton. I am gratified at the efforts I think you are making, to collect light upon this great and important subject, and cannot question it will be productive of advantage.

Let me venture a word of advice to my planting friends and country merchants. Now you have sold your cotton and towards this crop you have no further immediate interest, and hence may be disposed to speak carelessly of the receipts that are yet to come in, or of your ideas about prices; but you have a direct interest in full justice being done to the remnant of the crop unsold, as it will be simple justice to buyers. For example, if the crop does not exceed 3,0000,000 to 3,100,000 bales, they will certainly make fine profits on their purchases, and they will return to their work next season in good spirits, and meet the prices which may prevail without any malicious feelings towards them if they are ever so high. And ought we not to protect and sustain them in every honorable and reasonable mode? Then let us be cautious to allow no remark to escape us that is not founded on *probabilities* and *facts*. I will illustrate my meaning thus:—Last summer, in New York, a Mobile cotton buyer received such accounts from those sort of careless writers and speakers, as caused him to write to France, and perhaps England, that the crop was wonderfully promising, and that in no event could it fall below 3,500,000 bales, &c. &c. In Havre it created a panic, and they sold cotton at tremendous sacrifices, and, instead of realizing fine profits, they lost their money.—This may account for the smallness of the business of the French buyers this season; they have hardly been known in the market until they had realized fine profits upon some random purchases they made from time to time by early shipments, since when, and that but recently, they have operated freely. Now, I say no man has been, or was justified in seriously estimating this crop at 3,500,000 bales.

Below you will find a table of the American crop from 1839, which I desire all parties to examine. They will see what has been the progress of cotton planting, and by this I consider is proven that any allusion even to a crop of 3,50 ,000 bales has been as *absurd* as it was *preposterous*. I do not wish to check the agreeable propensity of gentlemen for gossip, but those who do not deal fairly and honestly with this subject, should be appreciated and dealt with as a traitor to Southern interests. By an examination of this table of the production of cotton, it will strike you that in six years out of twelve, the production fell greatly below in each what it was last year—that two large crop years in the period only succeed each other in the years 1847 and 1848, till those of 1851 and 1852. In 1851 we received 3,015,000 bales, and the crop of 1852 will be about the same To say that this year, or last year, or any year, more real effort is made, or will be made, to make a crop, is incorrect, as planters make every effort possible every year to make a full crop;

there is no variation from this rule. Now what shall we say respecting the coming crop? Why we must keep in mind that we have been much later getting it planted than usual; planting is scarcely finished on any plantation yet. In July it will appear flourishing, and whippersnappers, if you do not check them, will begin to write again that the crop will be perhaps 3,500,000 bales. Judging of the past, which is the proper mode to arrive at the probabilities of the future, the coming crop *must be short*. All the corn and cotton must be worked together. Wheat must be cut (and I hope crab-grass hay,) and the consequence will be crops will be grassy and the worm will eat it up, more or less.

Let there be no more complaints respecting the crop than are real, but when complaint should be made, make it candidly, and let us know all. I have seen those late crops grow off and look uninterruptedly fine, till frost, but being late, the stalks could not mature the bolls, and only half, or about half a crop was gathered. I would be glad to see the crop turn out 3,000,000 bales at least again, but with so backward a stand, we can not only hope, but can not expect it.

Every element concurring to promote the interest of the cotton planter, appear to be in successful operation, and, when his interest is promoted, there is always a general season of prosperity throughout the land. I look for good prices for the next crop; planters may as well raise their marks high; as with the present state of consumption, trade, and universal prosperity, they can get them if they *demand them*.

When those 3,500,000 bale fellows see how ridiculous they have made themselves, and consider how much harm they have done, it is to be hoped they will not be imprudent enough to trouble any one with their opinions on this subject.

Wishing every success to cotton planters, I am truly yours,

GEO. G. HENRY.

TABLE

OF CROPS FROM 1839 TO 1852 IN THOUSANDS OF BALES.

1839,	2,178,000	1845,	2,101,000
1840,	1,635,000	1846,	1,779,000
1841,	1,684,000	1847,	2,348,000
1842,	2,379,000	1848,	2,729,000
1843,	2,030,000	1849,	2,097,000
1844,	2,395,000	1850,	2,355,000
		1851,	3,015,000

By recent scientific researches on the part of Peter A. Brone, Esq., of Pennsylvania, it has been established that the United States can outrival the world in wool as well as in cotton. Thus, Spanish sheep yielding naturally 2,000 to the inch, carried to England, degenerated to 900 to the inch, and brought to the United States recovered to 2,100, or finer than the original. The fact being once established that our soil and climate produce finer wool than other countries, will give to our manufacturers invariably the superiority in cloths, if the manufacturer is allied in his interest to the grower.

Every husbandman should carefully read and digest matters connected with his business; his success being as dependent upon full knowledge of its principles and details, as is that of the lawyer or physician, with a knowledge of the science of law or physic.

An excellent cement for seams in the roofs of houses, or in any other exposed places, is made with white lead, dry white sand, and as much oil as will make it into the consistency of putty.—The cement gets as hard ar any stone in the course of a few weeks.

Contents of this Number.

History of Cotton Manufactures, ... Page 129
Marl and Marling, ... 131
Nutritive Value of Oat Hay, ... 133
Education of Farmers, Colleges, &c., ... 135
American Women and Rural Life, ... 137
Experiments with Guano and Barn-Yard Manure, ... 138
The Forces of the Farm, ... 139
Power of the Soil to retain Manures, ... 141
The Seed Trade, ... 143
Advantages of Fairs—Improvements—Draining, ... 143
A Column of Facts and Agricultural Practice, ... 144
EDITORIAL—Will Peas kill Hogs, ... 145
Our Cabinet of Exchanges, ... 146
South-Western Industrial Fair, ... 147
Plantation Economy, ... 147
Divine origin of Agaicultural Labor, ... 148
Rotation of Crops, ... 149
Letter from Marengo—"Y. A.", ... 150
Rail Roads, ... 150
Policy of the Planting States, ... 152
The Orchard, ... 154
What is Cultivation, ... 157
Lucerne—Its Culture and Uses, ... 158
Cotton—Prospect of Prices, &c., ... 159

J. A. & S. S. VIRGIN,

MACON, GA., AND MONTGOMERY. ALA.,

DEALERS IN



PIANOS, HARPS,

GUITARS, STRINGS,

Sheet Music,

AND A

VARIETY OF MUSICAL MERCHANDISE,

GOLD AND SILVER WATCHES,

JEWELRY. SILVER AND PLATED WARE,

AND FANCY ARTICLES.

N B.—Watches, Clocks, and Jewelry repaired in the best manner.

April 1, 1853-6t

GEORGE G. HENRY,

COMMISSION MERCHANT,

MOBILE, ALABAMA.

Mobile, September 1st, 1852.

ALABAMA JOURNAL JOB OFFICE, PRINT.



A Monthly Journal, devoted to improved Plantation Economy, Manufactures, and Mechanic Arts.

Vol. I. MONTGOMERY, JUNE, 1853. No. 6.

Marl and Marling.

(Continued.)

In endeavouring to furnish you with something like a theory of the action of lime, I have stated some—perhaps many things—which are questioned by men of great scientific attainment. Agricultural Chemistry—indeed the whole science of chemistry—may be said to be yet in infancy. If it is difficult to penetrate the arcana of passive nature, it is far more so to investigate those active operations which are conducted in the air and under the ground, in the formation of plants, complicated as they are in addition by the yet unknown vital agency of the plant itself. Although, on the whole, the art of agriculture has been vastly advanced by the discoveries and experiments of chemists, and he who shuts his eyes to the light they are constantly shedding for the benefit of farmers, is now, and will soon be much farther, behind his age; still it is well known that great absurdities have been put forward, and with the utmost confidence, by the most eminent characters in modern science. In speaking, then, of the peculiar action of any of the elements out of which plants are formed, and its agency in the mysterious operations consummated in the production of a full-grown, matured and fruit-bearing plant, it is not only becoming, but necessary, that every one, most especially a mere farmer like myself, should express opinions with great diffidence and caution, and hesitate before drawing even from established facts, inferences of important and extensive bearing. In view of this, I ought not to omit to state to you, that within a few years past, a sweeping theory has been suggested by one of the first chemists and most popular writers of the age, that has found some able supporters, and which if true apparently upsets every thing that has been said of the effects of lime in furnishing food to growing plants out of decayed vegetable matter. Dr. Liebig asserts that the decayed vegetable matter of the soil called humus, or mould, affords no direct nourishment whatever to plants. That they derive all their organic constituents from the atmosphere, and only their inorganic from the earth. The organic constituents of plants are those which are dissipated when they are burnt, and in most vegetables amount to from seventy-nine to ninety parts in a hundred. The inorganic constituents compose the ashes which are left by fire, amounting usually from one to three parts in a hundred, in some rare cases to as much as twelve per cent. The only nourishment which, according to this theory, the soil affords to plants, being thus limited to from one to three parts in a hundred, the utmost direct influence of good or bad soils, of manure of all kinds—of lime, alumnia, silica, and all mineral elements, can reach no further than to the modification of an hundredth or at most a thirty-third part of the crop we cultivate. It follows that the world has all this time laboured under a most important error in estimating at such

vastly different values, what we call rich and poor lands. That the effects of manure are in a great measure fanciful, or at least that from one to three pounds of ashes are equivalent to a hundred pounds of vegetable matter, as an application to the soil, and that it is useless to labour to put on manure in any other form. Knowing as we do that a single drop of prussic acid will almost instantly extinguish life, it would not be fair to deny very great influence to even the smallest proportion of inorganic matter in the production of plants. And since Liebig concedes that until the leaves are formed, the plant derives its carbonic acid from an artificial atmosphere generated by the contact of humus in the soil with the air, it would not be safe to denounce this theory in the present state of science, as absurd. It is admitted, too, on all sides, that plants do assimilate carbon from the atmosphere, and it seems established that ammonia descends in rain water. However true this may be, and though Liebig's theory was established as perfectly so in all its parts, I should think it most prudent to hold on still to what experience and rational deduction have taught us of the influence of vegetable mould on crops, in the hope that further discoveries might harmonize old facts and new truths, especially as none of us would set about improving the atmosphere, or desire to add more carbonic acid or nitrogen to it, since any material increase of these elements would render it fatal to animal life. Indeed, no scientific discoveries or force of logic can ever, I am convinced, for an instant shake your confidence or that of any practical farmer, in vegetable mould and compost manure; or lead you to doubt that the amount of your crop, if properly tilled under fair seasons, depended in all other respects wholly and solely on the quality of your land. Whether the soil furnishes one part or ninety-nine parts in a hundred—you have too often seen plants on the same acre subject to the same identical atmospheric influences throughout, varying from good to worthless, according to the soil, to question the important fact that by improving your land you improve your crop in the same ratio precisely, and that by exhausting it you equally deteriorate the crop.

In fact, depth of soil, by which we mean depth of decayed vegetable mould, or decayed vegetable mould mixed with sand, clay, &c., has been with you, as with all the world, heretofore, a criterion, and a never failing one, of the value of land, and so it will forever continue to be, I venture to assert. If then, as I believe, and you will probably agree, plants derive their most important constituents of all kinds from the soil and from vegetable mould, the value of lime in the soil is by no means limited to its action on the mineral or inorganic constituents of it, but extends to the production also of those organic elements which preponderate so immensely in all vegetation.

But your inquiry of me was in reference to Marl. I must therefore remind you again, that all which has been said of lime is true of marl. If it is slower than lime in its early operations, that is more than compensated by many advantages which it possesses. This is becoming so well understood, that wherever the same quantity of lime can be placed on land as cheaply in the form of marl, it is rapidly superseding the use of it in all other forms. Marl contains besides carbonate of lime other valuable constituents. Its silex and alumnia though fine in quality are not of much consequence, since they are never thus applied in sufficient qualities to effect the soil materially. But some marls—those of Virginia, for instance—contain sometimes sulphate of lime and the valuable green sand of which I have spoken. As the sulphate of lime exists there in Eocence Marl it may be discovered in our formation. I have seen green sand in specimens from several localities in this State. A deposit of green sand, such as is found and used to an immense extent in New Jersey, would be more valuable in your county than the richest gold mine in the world. There is none of it at Shell Bluff. I have already spoken of phosphate of lime. In marl from Asbury river, in this State, which belongs to the same formation as our marls, five per cent of this phosphate has been discovered. From some crude experiments of my own, I am inclined to believe it exists in some of the marls at Shell Bluff, and probably in yours—to what extent I would not undertake to say. But five per cent of it would give you the equivalent of nine bushels of ground bones in every hundred bushels of marl, which alone would be worth more than the whole cost of applying that quantity of marl, though the expense of it might be five dollars. We cannot, however, expect to find it in such quantity in all the marls we use. Those will prob-

ably be richest in it, in which are found remains of bones and teeth. In the shell marls on the Rhine, recent analysis has detected an important proportion of azote, derived, it is supposed, from animal matter. This is the most powerful, as you know, of all manures. There is every reason to believe that a scrutiny equally rigid would disclose a valuable proportion of it in our shell marls here.

The duration of marl in the soil, is undoubtedly greater than that of lime. The question of the duration of calcareous earth applied to lands, is one of great importance itself, and about which you will no doubt desire to be satisfied before attempting to use it. I have mentioned already, that the ancients regard marl as producing its effects from ten to eighty years. Lord Kames states an instance of their being observable for one hundred and twenty years, and Mr. Ruffin another of sixty years. Few or no records of such experiments have been handed down from generation to generation. In those countries where lime and marl have been used most extensively and for the longest period, it is impossible to say how the land produced before they were applied at all, in comparison with its production now. Of late years, more accurate accounts have been kept. The peculiar effects first observed to follow the application of lime, have been thought to disappear or materially diminished at various periods, reaching from four to forty years, according to the amount applied and other circumstances. It is supposed by writers and farmers abroad, that about three and a half bushels of it are consumed per annum by the crop, and that in general the influence of any quantity will cease in from twelve to twenty years. But these conclusions are not to be relied on. It is certain that no crop will take off so large an amount as three and a half bushels, and the loss from other causes is altogether indefinite. While, though, at the end of twenty years, the same precise effects as at first may no longer be observable, it by no means follows that this may not be owing to the want of proper applications of other manures that would excite the lime again to its original action. Mr. Ruffin thinks that marl once placed on land, will endure as long as the clay and sand in it. Though we might not indulge fully in this belief, I am of opinion that it will last for a period which may be called indefinite, from its remoteness—particularly when crops are grown such as we cultivate. Irish potatoes consume more lime than any other crop, perhaps; nine tons, which are sometimes grown upon an acre, though not with us, abstract about two hundred and sixty-six pounds, or say three and a half bushels—but two hundred and sixty are contained in the tops, which we never take from the land. A thousand bushels of turnips, tops and all, consume about two bushels of lime. Wheat, the cultivation of which is extending among us, requires for a crop of twenty-five bushels, straw and all, about nine pounds, or a half peck. Cotton and corn do not require more. Seed cotton sufficient to make a bale of four hundred pounds—that is fourteen hundred pounds in the seed—will consume about three pounds, and most of that in the seed which is invariably restored to the land. If we treble this amount for the stalks and leaves, which, however, usually rot on the ground, the exhaustion of lime by our heaviest cotton crops will not exceed half a peck when every thing is taken off. Thirty-five bushels of corn will consume only about one and three-fourth pounds of lime; if we add six times this amount for the cob, shuck, blades and stalk, it will not require more than cotton or wheat. I am not aware that our cotton stalks, or our corncobs, shucks, stalks or blades, have ever been analyzed; but I have, I think, fully allowed for the lime they may contain. And, at these rates of exhaustion, thirty bushels of lime, which is about the quantity contained in one hudred bushels of marl that has sixty per cent of the carbonate, will supply the wants of our usual crops, when much larger than we now average, for two hundred and forty years, if the land was cultivated so long, without rest or restoring anything to it. The consumption of the crop then is next to nothing.—The loss arising from other causes is undoubtedly greater. Quick-lime dissolves in 750 parts of water. A fall of forty-four inches of rain, which is less than the annual average quantity that falls here, would afford water sufficient to dissolve one hundred and seventy bushels per acre. Quick-lime when spread on land, however, becomes a carbonate, and nearly insoluble, too soon to lose to this extent. Still a considerable amount might be lost in this way, by a heavy rain immediately after liming. Lime, after being burnt, falls into a powder. Its minute particles are forced by showers, aided by deep plowing into the subsoil, and much

may be thus carried off. When these things are considered, it is obvious that all the lime in the land may in time be exhausted, as it has been from our "drifted" soils. But the chances of its duration are greatly increased by being applied in the form of marl. Being a carbonate, it is soluble by the carbonic acid in rain water only in small quantaties, and ages must elapse before it could dissolve and carry off any great amount; and not having been reduced to a fine powder, its particles are too large to be readily driven down into the subsoil, below the reach of the plow.—Without, then, assigning any precise limit for the duration of marl, I think it may be safely concluded, that the effects of a sufficient application, under proper culture, will last for a longer period than we can conceive ourselves to have any direct interest in the land to which we may apply it.

OFFICIAL.

SPARTA, GA., March 7th, 1853.

Messrs. Editors Soil of the South:—The Executive Committee have instructed me to have published the enclosed report, and (in compliance with the request made in it) the Essay of Mr. Ruffin, to which it relates. Please to accompany the publication with this explanation—since the course pursued by the Executive Committee in regard to this Report and Essay, is different from that adopted as to other prize Essays, and is pursued only in respect to the wishes of the Committee to whom this class of Essays was referred.

Very Respectfully,
D. W. LEWIS.
Secretary S. C. A. S.

LAPLACE, Macon Co., Ala., December 20th, 1853.

Gentlemen of the Executive Committee:—In accordance with your instructions, in committing to my hands the Essays on Agricultural Education, I associated with me the two gentlemen whose names appear below.

After reading over the Essays, which we carefully did, I was instructed to make the following REPORT:

Your Committee beg leave to make the following Report, which is respectfully submitted.

Five Essays were submitted to our examination, on the subject of Agricultural Education, and while it affords us much pleasure to remark, that each of the Essays exhibit considerable merit in regard to this important subject; nevertheless, in our opinions, the Essay marked "A. B." is decidedly entitled to the premium.

Your Committee further ask, that this *valuable document* be published *at once*, and spread out before the Agricultural community, without waiting for the publication of the Society's transactions.

All of which is respectfully submitted.

N. B. CLOUD, Chairman,
E. A. HOLT,
JAS. L. ROBERTS.

PREMIUM ESSAY
ON AGRICULTURAL EDUCATION.

BY EDMTND RUFFIN, OF VIRGINIA.

Agriculture, as an employment of labor, and the means of drawing subsistance from the earth, may be, and generally has been conducted with less skill than any other ordinary business, or exercise of either physical or mental labor. The most ignorant of the human race may know that, by covering seed in the soil, and weeding the growing plants, fruits will be obtained for the subsistence of the cultivators. And as a greater or less measure of production may thus be obtained, by the exercise of the lowest grade of intellect, and by the rudest processes, it seems to have been thence inferred that less instruction, and less preliminary knowledge, were required for even the proper tillage of the earth, than for any other business or persuit of man. No one, perhaps, has expressed this opinion in words. But acts, of much more force than words, seem to show that nearly all mankind had held this opinion; and in this country, more especially, in the action of all cultivators of the soil, and of every State government representing these cultivators, there is no indication of even an exception to the general prevalence and influence of the opinion that agriculture needs but little knowledge, and no preliminary instruction.

But though scanty products and profits may be derived from the rudest labors of ignorant cultivators, there is no employment of man, whether of science or art, which requires, to secure its greatest rewards and benefits, so much and such varied

knowledge, skill and judgment, as does agriculture; which is both an art and a science, and also a business requiring much administrative talent for conducting it with proper economy, and due adaptation of means to the ends sought. And more especially are these requisites needed in these slaveholding States, to which my remarks will be designed more particularly to be applied.

All other pursuits admit of, and are much advanced by, great use of the division of labor.—Thus, navigation has been brought to its present highly advanced condition, and is carried on by the combined labors, mental and mechanical, of numerous separated classes, some of whom may scarcely know of the existence of other co-laborers, or of the purpose for which their labors will ultimately serve. The astronomer, who studies only the courses and phenomena of the stars—who is devoted to abstract science only—and has no concern with or thought of worldly business and gain—yet by his sublime discoveries in the heavens, furnishes the most important and indispensable aids to the navigation of the ocean. The great discovery of the steam engine, and its improvements, by men of either scientific research or mechanical skill, have doubled to navigation the value of the previous aid from astronomy. Yet all these discoverers and improvers, and many others indispensable to modern navigation, might never have seen a vessel, or have been at first aware of the practical application of their discoveries. And the other classes, who severally provide materials, and construct vessels and perform the mechanical labors of navigation, may be profoundly ignorant of the working and the very existence of the scientific aids by which their labors are made effective.

In comparison with other pursuits, agriculture can have but little aid from the division of labor; and, practically, has much less than ought to be used. It is true that the cultivator obtains from other hands and arts his machinery and utensils; and that he is indebted (perhaps without being aware of it) in some degree, to scientific research and theory for the plan and general direction of his labors. But still, for much the larger part of all his labors, the cultivator and proprietor of land has to direct every one of the hundreds of various details, all of which belong, and of which the proper care is essential, to his business.

Regarding agriculture merely as an art, it is no small matter that the cultivator shall know how to order and conduct the numerous mechanical proceses, all of which are essential to success, of plowing, hoeing, draining, reaping, preparing crops for market, &c.; and to keep in good working order, all the implements, machines, and appliances for all farming processes. There are not many employments which require more of this merely mechanical capacity and skill. Yet this one is but the lowest grade of the three great departments of agricultural knowledge required; and which one, however generally and greatly deficient on nearly all cultivated lands, is more usually operative than either of the other and still more important requisites for agricultural success. The highest skill and perfection in the practical operations referred to, which belong to the *art* of agriculture, would be of little use, if the cultivator is not also directed by the *science*, which would direct why, when, how, and under what circumstances, each and every mechanical labor or process, shall be either performed, modified or wholy omitted. It is not necessary, indeed, that every individual farmer shall be a scientific agriculturist—and it may be, that many may do well in practice with scarcely any acquaintance with the science of agriculture. But, nevertheless, it is essential, not only for the greatest success, but for even a moderate degree, that all practice in cultivation shall be directed, as in fact it always is directed, or influenced more or less, by the theories and reasoning which constitute the science of agriculture. An ignorant individual cultivator may not reason at all. But he is not therefore the less directed in his practice by the glimmerings of light derived from the experience of better informed farmers, who themselves derived their knowledge from some source of scientific instruction and reasoning. The sound scientific knowledge of one individual, in some cases, might serve to diffuse light to thousands of merely practical cultivators, and to influence and direct successfully the general practice throughout an extensive region. Still this aid and direction would not be the less furnished by science, even though most of those who were benefitted by the aid, were totally ignorant that its source was in scientific reasoning and research. All the success of merely practical cultivators is due to their availing themselves of such lights of

scientific instruction as are readily accessible and available. And all of those who deem themselves the most perfectly independent of the aid of scientific agriculture—who indeed scorn and denounce it under the contemptuous epithet of "book-farming"—are, in fact, directed in their almost every labor and process by doctrines which were derived indirectly from scientific agriculturists. But the great drawback from the benefits so derived is, that the sources of information are so imperfect, or so remote, and the channels through which the instruction flows are so circuitous and so clogged with errors, that the lessons so received are greatly damaged in their truth and value.

Further: A planter may be so fortunate as to be able to avail himself (through his subordinate agents) of every proper appliance of art and skill—he may also be well versed in the science of agriculture—and yet his results may be unsuccessful, and his labors and capital be unprofitable, for want of still another requisite. This is administrative ability—or what, in common parlance, is understood as a man's having "a turn for business," and habits of business. It is to little purpose that both the art and science of agriculture may direct and accompany all the operations of a proprietor, if he does not also know how to govern and direct his subordinate agents and laborers, to manage his teams and their equipments, to economise his provisions, and to guard against the manifold evils of waste of means in every department. It is this all important capacity for good general management, (more usually a natural, than an acquired passion,) which enables many cultivators to thrive though greatly deficient in the other requisites of knowledge and skill. And it is the want of this business capacity, or of its proper exercise, which has produced to so many other cultivators loss or failure, even though exercising more than ordinary knowledge of the art or the science of agriculture, or of both in proper combination. When we hear (as so often occurs) of a person's losses, or perhaps the ruin of his fortune, being ascribed to his knowledge of "book-farming," it will generally be found that the true cause was not this kind of knowledge, (which, *if true knowledge*, can never be otherwise than beneficial,) but his want of knowledge of management, and the consequent deficiencies of all proper arrangement, system, discipline and economy of his estate.

There are but few, if indeed any person, who have attained an eminent station in all three of these departments of knowledge, which are required to make a perfect agriculturist. But there are many farmers or planters who, however falling short of these highest claims to distinction, have acquired more knowledge, and exercised more talent, in conducting their humble business, than have served, and will again serve, in many cases, for the whole intellectual capital of renowned commanders of armies, and rulers of nations!

When so much study and research is required for attainments in the science—so much skill and judgment for the art—and so much ability and varied talent for the business in general—it scarcely needs proof, that no other pursuit more needs instruction for its young votaries than does agriculture. Yet it is almost the only business or profession which is without any regular and ordinary instruction, and in which every learner is without a teacher. Agriculture is not only taught, and without any means for being taught, but it is the only science or art which is in that destitute condition. For every other pursuit, requiring skill or knowledge, every beginner receives early instruction from some person supposed to be well-informed, and competent to instruct in the business. This practice is universal, and properly deemed indispensable, whether for the most simple mechanical labor, or the most abstruse scientific study. Farmers, alone, are expected to understand their business without instruction—and indeed, almost without any available means, in this country, of obtaining information. If, in any other entensive and complicated business, it was the general usage of capitalists to commence as undertakers without any knowledge of the theory or principles—to employ operatives and superintendents who were as ignorant of the practice—and that for all to acquire the knowledge wanting, reliance was placed solely on their subsequent untaught operatives—every voice would pronounce that any business so pursued must inevitably end in bankruptcy. Yet this is the course of procedeure, nearly to the letter, in almost every agricultural business in this country, whether on a large or a small scale of operations. And the losses always incurred for the want of preliminary instruction, would be enough to cause bankruptcy in farming likewise, if this business did not yield good

profits for even limited knowledge, and ill-directed effort. The actual average returns would be more than doubled, if the needed instruction for the business was afforded, and the loss from ignorance and inexperience were avoided.

The annual course of the heir and expectant cultivator of a considerable landed property, is to be educated in some town, far from his future property—and to be instructed almost exclusively at first in dead languages, and afterwards in science; all of which afford very little knowledge applicable to the student, designed for agricultural pursuits. Perhaps to this general scholastic instruction, the recipient may add more or less of the study of law or medicine; but nothing of any science or subject especially designed for aid to agricultural education. When arriving at manhood, the student throws aside all these studies, and undertakes his before designed business of farming. With every part of his business he is almost a stranger to the country scenes and country life. Still a remarkable aptitude for agriculture may sometimes enable such a proprietor to contend with successfully, and finally overcome, all the disadvantages of his own ignorance and that of his agents; and to become a good farmer, notwithstanding all the enormous obstacles in his way.—But because many such cases may be before us, it would be a great mistake to take these exceptions for the rule, and thence infer that instruction was unnecessary for farmers. It would be not less erroneous and absurd to infer that all education in literary and scientific institutions is unnecessary, because without such aid, a Franklin could reach a station of great celebrity in science, and in general and useful knowledge.

But great as are these disadvantages of the wealthy young land-holder, they are as nothing compared to those of the far more numerous class of men of small possessions, and very limited education. Travel, reading, frequent and varied social intercourse with his fellows who are better informed, (or who, even if as ignorant as himself, are all striving to learn,) all serve to forward the instruction of the farmer, who can command these resources. But the small or poor cultivator, who is confined to his daily toil, has no such means, and can rarely derive much knowledge from other persons, if surrounded only by neighbors in similar circumstances and under like disadvantages.

Such are the inauspicious circumstances of the whole class of cultivators of our country. The actual results and effects of this universal want of proper training and instruction, are such as might be expected in advance, from merely knowing the causes.

These views, concisely as they have been set forth, I trust will suffice to show the enormity of the existing want of agricultural education. Before proceeding to propose any mode or system of instruction, it is proper first to inquire as to the amount of funds to be devoted to this purpose, and at whose expense they should be provided. I maintain that the principal part of the expense should be defrayed by the state—the whole community—which will receive the principal part of all the accruing benefits—and enough benefits to repay more than ten-fold every expenditure required for this purpose. Even if it should be objected that the agricultural interest would receive all the benefits, and therefore ought to pay all the cost, this would scarcely vary the case. In each of these southern states the agricultural is the great preponderating interest. Directly or indirectly, agriculture pays all the taxes. And upon the products and profits of the agricultural interest are supported all the minor interests or other pursuits of indstury within the State. I mean this in no invidiuous or disparaging sense. For so long as each pursuit of industry is left free by government, each one is beneficial to all others.—The plow makers and the country blacksmiths, for example, as classes of minor interests, certainly derive every dollar of their gains from the class of cultivators of the soil. The benefits of the payers and receivers of these gains are reciprocal and equal. But it is not therefore the less true that the receipts of these mechanical interests will increase or decline with those of the great agricultural interest. Therefore, whatever measure of government serves to increase the profits of agriculture, will equally increase the receipts of all minor interests dependent on agriculture. If, then, in the agricultural State of Georgia, for example, agricultural education were provided for at the cost of the Treasury, and of general taxation, the case would scarcely vary at all in substance, from a tax being imposed on the agricultural interest, and disbursed for the benefit of the whole country.

There are still other points of view, besides these claims of right and justice, to prove the benefit and good policy of the government's providing for agricultural instruction. Most or all governments, and I believe all these Southern States, with a wise regard to the general interest, endow Seminaries for the higher branches of learning, which could not be sustained by private demand and patronage, even if established by private enterprise. And in many of these United States, such government aid and expenditures are extended to every ordinary branch of literary education. Thus not only does government aid, and at great cost, instruction in every branch of general education, but also instruction in the particular studies of private adventurers, as they may be considered, in schools of law and medicine—which professions certainly require no stimulus of government patronage to induce enough of aspirants to fill their ranks. But while most of our State governments thus pay liberally, and in some cases profusely and improperly, for all other kinds of instruction, of high or of low order, not a dollar has been paid by any of the States for instruction in agriculture. It is far from my design to object to these heavy expenditures for ordinary education, so far as they are properly directed—or to even double their amount, with the same condition of proper direction. But this I say, and will maintain—that if even such expenditures are directed and used in the best possible manner for aiding instruction in the usual branches of education, any portion of the amount, whether one-tenth or one-half, would be far more beneficially and profitably bestowed in judiciously aiding agricultural instruction and improvement—and this even if looking solely to the promotion of ordinary scholastic education. The direct and earliest effect of such aid to agricultural instruction would be to increase the improvement and the products of the land, and the profits and wealth of the proprietors, and consequently of the whole community. This increase of prosperity, and of means, to numerous individuals, would induce a large addition to their previous expenditures for the scholastic education of their children.—And thus they would return, for the aid and increase of scholastic education itself, much more than any amount which they had before received from the Treasury, in aid of their agricultural instruction and improvement. Every person, who may hear this announcement, can refer to some facts in proof of its truth, if he is acquainted with any locality where great increase of agricultural improvements, or profits, have been made. When, by such improvement, farmers' profit have been doubled, their surplus or disposable funds, (that is, the excess over the amount required for absolute necessaries,) will be much more increased and it may be as much as ten-fold. It is out of this surplus or disposable profit, only, that the expenses of education are usually defrayed. Hence, a farmer with a small income, who might find it difficult to spare fifty dollars yearly for the education of his children, could easily afford three hundred dollars, by his land being so improved as to yield a double product only. And in the general expenditures for education to be thus largely increased in proportion to the gross increase of production, will as certainly result from such increased production, as any other expenditures whatever. It is scarcely necessary to say that every dollar of increase to each farmer's income, from agricultural improvement—and all the millions which might thus be added to all the incomes of the whole State—would be expended in some way or other. Of that enormously increased expenditure, general education would have its full share.

Besides all these considerations and benefits, of the government's aiding agricultural instruction and improvement, there would be returned to the Treasury, in increased products of taxation, on the new wealth thus created, very far more than the amount of the most liberal bounty which had been bestowed for agricultural instruction. These inferences are indeed but suppositions—but supposed in regard to unquestionable facts. But with every just allowance for uncertainty of the extent of the operation, there can be no doubt that any judicious outlay of public money, given in proper direction for agricultural instruction, and thus conducing to agricultural improvement, would return a pecuniary profit to the Treasury; and would be more than reimbursed to every individual taxpayer, in his share of the general benefit accruing to the whole community.

But however beneficial and profitable to the commonwealth would be a system of agricultural instruction, it would not be required that all the expense should be at the public charge. It would

be, as in regard to other colleges, necessary for the State to provide the land and its stock, and suitable buildings, and sufficient salaries to teachers. A large and increasing proportion of the annual expenses would doubtless be met by the tuition fees of pupils. To such an institution, hundreds of pupils would be drawn, whose parents would gladly pay liberally for their instruction. Still, it would be a wise benevolence, and also a politic and gainful measure, for a certain number of poor youths, eminent for their moral and mental qualifications, to be admitted to the benefits of the institution at the charge of the commonwealth.

[*To be continued.*]

From the National Intelligencer.

Drainage.

Minutes of Information collected in respect to the Drainage of Lands forming the sites of Towns, to Road Drainage, and the Facilitation of the Drainage of Suburban Lands. Ordered to be printed for the use of the local boards of health and their surveyors engaged in the administration of the public health act. London, 1852.

The letter from Edwin Chadwick, Esq., C. B., which was published in our paper of Saturday last, opens a wide field for thought and effort. It is indeed the soundest wisdom in our municipal administrations, as well as in our national policy, to take care not "to plant old evils." It is often said, by way of apology for our country, that it is "new," and that fact does doubtless afford a proper solution of many omissions and wants; but in some points of view it constitutes our greatest advantage, and ought never to be pleaded in extenuation of errors. We possess the inestimable advantage of starting on our career in the midst of the most enlightened age of the world, and with the accumulated experience of all past time at our service. No doubt in the fundamental principles of government and general law we have profited fully by the examples of other nations. But there are other matters, subordinate, it is true, to those, yet of grave importance, in which the experience of the world is not to be disregarded, and in which we are likely, through sheer neglect, to commit serious mistakes.

The most superficial acquaintance with the state of our principal cities and towns must convince us that we are already to a grave extent "planting old evils," and the very evils to which Mr. Shadwick alludes. It becomes us, therefore, to accept the offer of the experience of another country, collected as it has been with the utmost care and labor, and now laid freely at our feet. It would be well if this information could be reprinted entire and widely disseminated through our country.

The first document to which Mr. Chadwick alludes is the one the title of which heads this article. It goes most elaborately into the subject of the methods, cost, and advantages of town and suburban drainage, and presents it in a plan and practical way. It is intended, indeed, as a manual for the surveyors of the local boards of health, and has the force of instructions from the superior and central executive board, to which are committed the sanitary interests of the entire kingdom. We present as many of the leading points in this important document as the limits of a single article will allow, reserving the other reports of the series for early future consideration.

The sanitary importance of drainage can scarcely be over-estimated, exhalations from moist and marshy grounds and from damp cellars and foundations being the causes of most of the preventible disease which pervades our cities. Water rising from a damp foundation by absorption renders the floors and walls damp in proportion to the absorbent nature of the materials of which they are constructed. Dampness in the soil is often rendered visible, particularly in the evening, in the shape of mist or fog, and these mists will often be found to mark out and cover the seats of preventible disease. Efficient drainage removes the cause of both these evils, and with it the diseases which flow from them.

But simple dampness is not the only evil against which the system of drainage is directed. The disease and discomfort produced by moisture is aggravated and complicated by the exhalation of noxious gasses from decaying animal and vegetable matters collected in cespools and other receptacles.

Fevers of a typhoid character result from this baneful combination, and the depressing effects of the inhalation of an atmosphere thus poisoned, creates and sustains an appetite for stimulants which give a temporary relief.

Town drainage is therefore two fold—simple water drainage and foul water drainage; the latter comprehending sewerage, as the term is now commonly used. The system, which is found to be the most economical as well as the most efficient, consists principally of tubular and *impermeable* drain-pipes. The objection to permeable pipes for town drainage are, that they let out and saturate the site with the foul water they ought to remove, and they detain in their pores much of the offensive matter passing through them, the gaseous products from which escape through the pipes and through openings into houses, and through gully-shoots into the streets, and pollute the atmosphere.

From open places, gardens, public grounds, &c., the plain surplus land water will be most economically carried off by arrangements of *permeable* pipes, on the same principle as those used for land under cultivation.

The town or city to be drained often occupies but a small portion of a natural drainage area, comprehending the line of water shed dividing a hill top or a ridge, and bounded by a brook or river beneath, dividing a valley—the greater proportion being occupied by tillage or grazing land, the drainage of which is important, on sanitary grounds, in proportion to its proximity to the town.

A well drained agricultural district surrounding a town is almost a necessary complement of a complete system of town drainage; for, as will be shown in a future article, this latter contemplates the application of town manures in a liquid state to agricultural production.

Suburban lands requiring drainage may be divided into two classes—garden, villa, and house lands in and immediately adjoining the town, and market garden, tillage, grazing land, and commons in its vicinity. The sanitary importance of draining such lands is clear from the fact that excess of moisture powerfully affects the local climate.

1. Excess of moisture, even on lands not evidently wet, is a cause of fogs and damps.

2. Dampness serves as the medium of conveyance for any decomposing matter that may be enveloped, and adds to the injurious effects of such matter in the air—in other words, the excess of moisture may be said to increase or aggravate atmospheric impurity.

3. The evaporation of the surplus moisture lowers temperature, produces chills, and creates or aggravates the sudden and injurious changes or fluctuations of temperature by which health is impaired.

The following are the chief agricultural advantages of land drainage to individual occupiers or owners:

1st. By removing that excess of moisture which prevents the permeation of the soil by air and obstructs the free assimilation of nourishing matters by the plants.

2d. By facilitating the absorption of manure by the soil, and so diminishing its loss by surface evaporation and by being washed away during heavy rains.

3d. By preventing the lowering of the temperature and the chilling of the vegetation, diminishing the effect of solar warmth, not on the surface merely, but at the depth occupied by the roots of plants.

4th. By removing obstructions to the free working of the land, arising from the surface being at certain times, from excess of moisture, too soft to be worked upon and liable to be poached by cattle.

5th. By preventing injuries to cattle or other stock corresponding to the effects produced on human beings by marsh miasma, chills and coals, including a general low state of health, and in extreme cases the rot or typhus.

6th. By diminishing damp at the foundations of houses, cattle sheds, and farm steadings, which causes their decay and dilapidation, as well as discomfort and disease to inmates and cattle.

Objections, both sanitary and economical, lie against the system of open ditch drainage. These ditches give rise to an offensive and unwholesome evaporation, and are more expensive, all things considered, than more efficient and permanent drains would be. The plan proposed as a substitute is pipe drainage with covered ditches, the advantages of which are testified to, by numerous competent witnesses. This plan, as applied to road drainage, will offer important facilities for private land drainage of every description.

Mere *surface* drainage by ridge and furrow, besides leaving the land surcharged with moisture, carries away the fine particles of earth, and with them the soluble manures and fertilizing matters which they contain. The earth thus removed clogs the main drains, and the dissolved manures are lost.

Thorough drainage, on the contrary, does away with ridges and furrows, and the water drains downward through the table land into the underground channels. The fine mould, if thus left upon the surface, the soluble manures are carried down into and absorbed by the soil and retained for the sustenance of vegetation. The water, by the time it reaches the deep-laid pipes, is thoroughly filtered and purified, and not liable to leave deposites to obstruct them.

As to the depth and distance apart of the drains, there seems to be some difference of opinion among eminent autorities. The rule must evidently vary with the nature and condition of the soil. The principle, however, seems to be established that the deeper drains need not be so near each other as shallower ones. Mr. Parkes gives the following table as showing the actual and respective cost of three cases of under drainage, calculated on the effects really produced—i. e. on the masses of earth effectively relieved of their surplus water at an equal expense:

Depth of the drains in feet.	Distance between the drains in ft.	Mass of soil drained per acre in cubic yards.	Mass of soil drained for 1d. in cubic yards.	Surface of soil drained for 1d. in a square yd.
2	24	3.226½	4.1	6.27
3	33½	4.840	8.98	8.98
4	50	6.453	12.00	8.96

Mr. Stephens lays it down as a principle that the drains should be so deep, at the least, as to place them beyond the reach of subsoil ploughing; twenty-six inches.

The following rules are given by Dr. Shier, one of the ablest agricultural chemists of Great Britain:

1st. The drains ought invariably to run down the steepest descent and parallel to each other.

2d. The distance at which the small drains are placed apart depends on the nature and texture of the soil, the depth at which the drains are to put in, and whether it is surface water alone they have to deliver.

3d. The best materials for the construction of the water-way of the frequent drains are tubes, tiles, and soles, water-worn pebbles from the sea beach, harped gravel, or broken stones. A decided preference should be given to tubes over tiles and soles. They are cheaper, occupy less space in the kiln as well as during transport, and are much less liable to breakage; they are easier laid, effect as complete drainage, and are less liable to silting or sediment, or indeed to accidents of any kind.

One of the important agricultural results of deep or thorough drainage is, that after a series of years the subsoil of a thorough drained field changes into the nature of soil as far down as the level of the water in the drains. This change in the subsoil is accounted for—

1st. By the ameliorating effect of air and water, producing healthy decomposition of the organic and inorganic constitues, and thereby eliminating substances which constitute the food of plants.

2d. By the washing out of deleterious ingredients.

3d. By the loosening of its texture.

4th. By the penetration of roots, and by their ultimate decay in the subsoil.

5th. By the penetration of earthworms and insects.

Dr. Shier thus enumerates the results of thorough drainage:

1st. When properly executed it always proves remunerative.

2d. The quality as well as the amount of the crops is improved.

3d. Clay lands which could produce only wheat, beans, and clover, have been made to produce root crops, thus enabling the naked fallow to be dispensed with, and permitting the adoption of a much safer and more profitable system of farming, in which the rearing and feeding of stock are combined with the growth of valuable grain crops.

4th. Thorough drained fields stand wet and drought better than undrained fields naturally of the same sort of soil.

5th. They are more easily tilled, and are in a fit state for tillage a much greater number of days per annum.

6th. All manures produce a much greater effect on thorough drained fields than on undrained ones.

The estimates of cost given in the report are entirely inapplicable to our country, and are therefore omitted. Relative cost, where labor was the chief element, might possibly remain the same in the two countries.

With regard to the shape of sewers, it is found that flat bottom sewers spread with water, increased the friction, retarded the flow, and accumulated deposite.

It is also found that first drainers generally fall into the error of having their pipes larger than necessary—in some cases in the proportion of thirty-seven to one. The size of the pipes should be carefully adapted to the quantity of water they have to discharge; and exactitude in their form and accuracy of pointing are highly desirable.—Their junctions should not be at right angles but in easy curves.

Experiment has shown that it is not necessary to increase the size of the main in consequence of the introduction of side pipes to such an extent as had been supposed, as the supply from the side pipe gives in many cases such increased velocity to the current in the main as to obviate the necessity of increased area altogether.

We have given above the main points discussed in the body of the report. The appendix contains many matters of practical detail, which we are compelled to omit for the present. They refer to the quantities of earthwork required in drainage, the quantities of rain that are filtered through the soil, the cold produced by evaporation from wet soils, the effects of drainage upon productiveness, the cost of tiles, pipes, and labor per acre, and, finally, the general sanitary effects of draining. We may recur to these particulars at some future time. S.

The total amount of copper procured from the mines of the United States during the year 1852 was 2,500 tons. There were consumed in the country during this time 6,000 tons. It thus appears that, with our enormous resources, we do not produce *half* as much as we consume. This will not always be so. The Lake Superior Copper Regions will soon be made accessible, by the construction of a ship canal at the Saut, and propellers will then be able to pass from all parts of the world directly to the mines, without breaking bulk. We shall soon be heavy exporters of copper, as we have the metal in larger masses and in greater abundance than any other nation—*Ohio State Journal.*

The chopping, or grinding of grain, to be fed to stock, operates as a saving of at least twenty-five per cent.

Moral Benefits of Slavery.

FREEMAN HUNT, *Editor of the Merchants' Magazine, etc.*

SIR: The excuse for sending this article to a *Merchants' Magazine*, is found in the title and design of such a work; as a *military magazine* is the appropriate repository of material supplies for the future, so is a *Merchants' Magazine* intended as a repository of mental supplies for their use. Slaves are considered and used as merchantable property by nearly one half of the States, and are guarantied in such use by the constitution of our government; hence any information respecting any other species of merchandise; and I feel assured that an article recapitulating the old, or adding any new light on that subject, will be highly appreciated by many of the readers of Mr. Hunt's incomparable journal. I propose, first, to consider the moral benefits of slavery, its design and effect, as is set forth in the universally acknowledged book of morals.

2d. That it is the true, speedy, and successful method, for civilizing the heathen.

3d. The probable duration of slavery.

Permitting history to guide us, we must conclude from the municipal laws found necessary to govern the Hebrews, that the chosen people of God were a very depraved heathen, previous to their becoming slaves to the enlightened Egyptians.* Although subject so the instruction of that enlightened people for four hundred and thirty years, yet we find when they are intrusted by Providence with self-government, that they were wholly incompetent; and the inspired instrument of their delivery had to operate on their religious fears, (with a thus sayeth the Lord,) to enforce the most simple † sanative laws; a circumstance unknown, if ever required to govern any other heathen.—Hence we infer that they were, previous to their bondage, a very depraved people, but having been taught subordination while slaves, their inspired guide could enforce civil laws among them by appealing to their fears and gratitude, which are the cultivated sensibilities of a slave. That the God of Israel did permit his people to be enslaved, no question can be made, and the permit being couched in the strong language (shall) of the decalogue, would lead us to believe that it was an unqualified

---

* Gen. xv. 13: Gen. xlvi. 8—4: Exod. xii. 40.

† Lev. xviii.: Deut. xiv.

edict, after the fulfillment of which, they were to be made a great nation; by deduction we infer, that in their native condition they were not suitable material to make a great and useful people of, nor until they were taught subordination and the civilized arts by the enlightened Egyptians; thus receiving the moral benefits of their enslavement.

The plan adopted for the civilization of Israel, appears to be the favorite of God to ameliorate the condition of the heathen, and to humble the proud. We find him using the same strong language (shall) while instructing the Hebrews to ‡ buy of the heathen and enslave them forever, which shall be an inheritance for their children afterwards; evidently limiting the term of their bondage by his own discretion, or their advancement in the arts of civilization and self-government, as in the case of Israel, and furthermore instructed them to § enslave the Egyptians, for the purpose of inculcating humility. According to the book of morals, this species of merchandise (property in slaves) has been used as a means for ameliorating the condition of man, since a very early period of the world's history, by a thus sayeth the Lord, and would seem that its continuance was intended, until an object was accomplished. We find under the new dispensation of Christ, who was sent as an exemplar to the world, that his teachings were definite in regard to the relation he found existing between master || and servant; his intelligent vicegerant (Paul) was not less mindful of the then existing institution of domestic slavery, of which we have an evidence in his inimitable ¶ letter to Philem-n, in regard to his runaway slave, whom he overtoek and sent back to his owner, begging for his pardon. Much more proof could be added, that the Bible recognizes and teaches the enslavement of heathen, and that they are merchantable property and have been since time immemorial; but enough has been referred to for the purpose of inviting investigation.

2d. That it is the true, speedy, and successful method for civilizing the heathen. We have no evidence that any other plan has succeeded to any great extent; it is true that the Christian churches discourse eloquently in regard to their exertions in behalf of the heathen, but judging by the fruits of their labours at home, the plain inference is, that but little had matured abroad. The first effort to introduce this plan of civilization in America, was made with the aborigines (Indians,) but the Europeans finding them unprofitable servants and yielding to selfish considerations, adopted the African; instead of persisting in that, which would have proved a blessing to the natives in the end. Since the English have had possession of the country, the Indians have had ample opportunity for improvement in the arts, and moral government of civilization; the protection of our government is and has been thrown around them, they have been encouraged by example, sums of mony have been appropriated to their use, enough to place them in comfortable circumstances, without any valuable consideration (so far as they are concerned) from them in return. Collection after collection of money has been made, much of it the result of the properly directed labour of the African heathen, and appropriated to their civilization; teachers and preachers have been sent to them, many valuable lives exhausted in their service; the result of all these efforts is, that they are Indians yet, and are likely to continue such, with the addition of the views of civilization, and an abhorance of its virtues. The reason for all this mispent time and money, is to be found in the want of authority to control them. The task of domesticating a wolf unconfined, would be as readily accomplished, as to instruct, with a permanent effect, the Indian, while in the employment of his wild freedom, with no other faculty cultivated but sense, and it undiciplined. The culpability of this government must forcibly appear to every reflecting mind; having those people in our midst so many ages, without advancing them in the road to civilivation; instead, we see them rapidly growing worse in a moral point of view, extinction awaiting their race, a burlesque on the divine image, and a disgrace to the country; and that too with the book of morals in our hands, plainly pointing out the true, speedy, and successful method of civilization. That they are of a superior order intelligences when compared with the African, we have evidence in their sagacity and determination in self defence; and that they have received a more enlightened revalation, is manifested by never capturing their brethren with the view of selling or enslaving, "but of the children of the

‡ Levi. xxv, 45—46.
§ Isai. xiv. 2.
|| Ephe. vi. 5.
¶ Philemon.

strangers," which edict they fulfil, apparently with the same views that the Hebrews were instructed, through their prophet Isaiah, to enslave the Egyptians. Yet with capacities superior and opportunities ampler for improvement, they are incomparable with the African heathen, which we have under process of civilization according to the Bible plan. Had the efforts been persisted in, which were made according to this plan, it is probable ere this our government could have erected a monument to herself, in the form of a state made up of civilized aborigines, effected by making them profitable laborers, wheras they have and are costing the labor of the country millions of money annually, as a means of defence against a worthless and wild enemy.

Having examined the second proposition analogically, of necessity we will offer an analysis of the third, after the same manner of reasoning. The duration of slavery is in the hopeful, but gloomy future; hopeful, because there is a hope during time, and gloomy, because of the great number of heathens that are in the world. We have not the least evidence, according to revelation, that slavery can cease so long as there are heathens, or until the world is brought to the light and liberty of knowledge; it is then we may look for equality among men of every grade. Knowledge, or mental power, has taken place of the physical of past ages, and until there is a mental equality, physical differences will prevail to the extent of forbidding the promiscuous amalgamatian of the races, which of right shouid, that the God-like principles of man may continue to bring into subjection the animal of his kind, that reciprocal benefits may accrue, and the world's uses be served. Had England and the Northern States, (from which the present generation were taught the first principles of domestic slavery,) continued to bear their part in this work, and not have yielded to self-interest, by dispensing with it, because of its unprofitableness, the duration of African bondage might have been shortened, as Providence evidently has an object to accomplish through it, as in the case of Israel; hence the subject resolves into this proposition: if it required four hundred and thirty years to fit the Hebrews for self-government, under constant domestic instruction by the entire Egyptian nation, how long will it require a small part of the American people to effect the same with fifty millions of Africans. If human officiousness were to succeed in releasing or extricating them from their present situation, it could but give a different and probably a worse form and location to their bondage; if placed in colonies, a despotic government would of necessity, have to be administered, either by some of them or by the governments interested in their colonization, from the fact, that a people unfitted for freedom cannot be made free, nor can a people prepared for freedom be made slaves. The interference by human agencies with the ways of Providence, in securing permenently the release of Africa from mental and physical bondage, may stay the work for a time but cannot prevent; and when the work of their bondage is complete, the exodus may be delayed by the self-sufficient wisdom of man, as did the Egyptians, but they will pass to the Canaan provided for them, although it should require the Atlantic Ocean to be opened with the dividing rod which was employed on the Red Sea. Having become a great nation in numbers with no reliable attainment in self-government, presents physical circumstances which must forever preclude the possibility of individual or national action effecting their exodus, and to attempt to hasten it without a knowledge of the divine will, may meet the rebuke that Pharaoh did in attempting to retain the Hebrews. Respectfully yours,

WM. S. PRICE.

Spencerville, Marengo Co., Ala.,
February, 28, 1853.

COTTON PICKING.—Cannot some ingenious mechanic invent a machine to pick cotton in the field? Such a machine, duly patented, would be worth a great sum to the inventor, and an enormous sum to the country. It would obviate the difficulty experienced in securing the crop when it is very large, and in procuring it when winter sets in early.—*Boston Transcript.*

TO LIGHT MATCHES IN DAMP WEATHER.—It may be useful to our readers to know that matches, when too damp to be used in the ordinary way, can be ignighted by rubbing them gently, for a few seconds, upon a piece of cork.

Periodical applications of ashes, tend to keep up the integrity of the soils, by supplying most, if not all, of the organic substance.

American Agriculture—What it is, and what it ought to be.

The following interesting article is taken from the National Intelligencer, supposed to be from the pen of Dr. Daniel Lee, of Washington City, which is well worthy of a perusal by those of all occupations. The article developes deep thought upon the future destiny of Agriculture in this great Republic:

"Few know what American agriculture is, and fewer what it ought to be. The Journal of the United States Agricultural Society contains full returns of the agricultural statistics of all the States and Territories, as prepared at the Census office, for the year 1850. These statistics present many interesting and instructive facts, and indicate remarkable progress in the productiveness of rural industry of the country. The capital employed in agriculture, including the value of the slaves so engaged, exceeds five thousand millions of dollars. Of this large sum, the returns show that $3,266,926,537 are invested in land. This consists of 118,596,025 acres of improved land, and 184,596,025 acres of unimproved land.—Probably, something over two-thirds of the labor of the nation is employed in tillage and husbandry.

American agriculture is distingnished by two prominent features—its productiveness of crops and destructiveness of soils. Crops, large in the aggregate and sometimes abundant per acre, are grown by thonghtlessly consuming the elements of fertility which nature has stored up in the virgin lands of this continent. Before any one can have a correct idea of what American agriculture is, he must carefully investigate the facts which show how much of the atoms in the surface of the earth that form six hundred million bushels of maize, one hundred and thirty million bushels of wheat, over three thousand million pounds of seed cotton, two hundred million pounds tobacco, sugar, and other crops in proportion, is annually removed from the arated fields, pastures, and meadows of the United States, more than is restored to them again. The difference in what the soil loses by tillage and in crops, and what it gains in manures, indicates the true character of our system of husbandry. Rural economy with us is not a study, but an empirical art. Hence no account is taken of the matter consumed in the growth of grain, grass, roots, cotton, tobacco, and other cultivated plants. Art and physical labor are every thing; principles and natural laws are nothing, in our farming operations. All that subsist on the fruits of tillage and husbandry in cities and villages are equally unmindful of their abiding duty to feed the land that feeds them. Not to do this is to impoverish the soil over millions of acres, and to a degree that farmers cannot possibly remedy by the aid of imported or home made manures. One hundred million acres now under cultivation must continue to detoriate until all classes that compose our twenty-five million of population, who are fed and clothed by the products of the soil, co-operate in giving back to the land its indispensible elements of fertility. So long as these are wasted in cities and villages, the arated and depastured fields and forests that yield the grain, meat, dairy products, fruits, vegetables, sugar, rice, cotton, tobacco, flax, hemp, wool, wood, lumber and timber consumed, must suffer needless damage. To extract the few precious items that form cotton, bread and meat out of the surface of a virgin soil and send them to market is one of the simplest of all mechanical operations, and therefore it is that the most stupid slaves and ignorant whites are so successfully employed in agriculture. To wear out the natural fruitfulness of land requires as little thought and knowledge as to wear out shoes, hats, plows, hoes, and axes. Skill in production, without making full and adequate restitution, is simply an advanced state of the art of transforming soils which are naturally fertile into sterile old fields and deserted plantations. The art of killing land has several stages in its development; and we have passed from the first into the second in such old States as New York, Massachusetts, Pennsylvania and Maryland. The second stage differs from the first in this: that, whereas, in the first stage farmers apply no manure, as a general rule, to new lands, but draw on the bounty of nature for their crops, they now use on old lands in the second stage, some amendments, such as lime, ashes, bone dust, gypsum, guano, and stable manure to form a part of their harvest. Such elements of grain, tobacco and cotton as were not consumed at an earlier date, are now being removed by deeper plowing and more thorough cultivation.

One can predict the result of this advanced practice with as much certainty as any future eclipse

of the sun or moon may be foretold. To draw potash and bone earth from the sub-soil as well as from the surface soil, to be wasted in cities where crops are so largely consumed, is simply to inflict deep instead of shallow sterility on the land so treated. The available supply of the ingredients that impart fruitfulness to the earth being known and quite limited in quantity, it would not be difficult to devise a system of agricultural statistics showing from year to year whether the improved lands of a State or county lost or gained in the raw material for making human food or raiment. Allowing two and a half per cent per annum for the increased area brought under cultivation since June, 1850, and the improved lands of the country may now be set down at 125,000,000 acres. Of these, it is a large allowance to say that one-fifth or 25,000,000 acres are holding their own in the elements of crops, leaving 100,000,000 acres subject to constant detoriation. In the national work of exhausting land, not the cultivators of the soil alone, but all consumers and exporters of agricultural staples participate equally in the wrong done to our common mother earth. Those that grow so many million tons of grain, cotton, tobacco, hay, &c., are forced to send to distant markets the precious atoms that leave their farms in cultivated plants. The return of these needful atoms to recuperate the soil whence they are taken, depends more on the action of those that dwell in cities and villages than on the action of the farmer. The latter cannot use what the former have wasted and destroyed. It is in cities that both the study and practice of good husbandry must begin before they are possible in the country, as society is now formed. It is the supreme folly of the denizens of American cities, with their navigable rivers and lakes, their canals, and their far-reaching railroads that desolate the land which supports their commerce, their manufactures, their trade, their arts, and their professions, because they greedily grasp all that tillage and husbandry produce, and give nothing back to renovate the impoverished fields of the planter and farmer.—The true condition of American agriculture is understood. Statesmen, innocent of any knowledge of the science, expect impossibilities both of the soil and its cultivators. Farmers are required to give for indefinate ages to inland and foreign commerce unlimited quantities of human food, and the raw material of clothing taken from the surface of the ground, and receiving nothing but dry goods, groceries. hardware, farm implements, and household furniture in exchange. Such is our present system of rural and political economy. It makes the land support all classes and all interests, while it does nothing whatever to maintain the enduring fruitfulness of arated and depastured fields.

Improvements in agricultural machinery, in plows, cultivators and reapers, in roads and other facilities for transporting crops to market, are helps to hasten the depletion of all the farming lands in the Republic. Has not the planting of cotton and corn impoverished millions of acres at the South? When was this operation so extensive as in the year 1852? How can the application of twelve pounds of potash to an acre planted in tobacco or wheat in Virginia or Maryland, and forming a part of two hundred pounds of Peruvian Guano, make good the loss of thirty-six pounds of potash removed from the acre in the crop? To put a pound of bone earth, magnesia, potash, ammonia or chlorine into the earth, and take three pounds out by deeper and better tillage, is surely not the way to increase the earthly elements of crops in the soil. At best, it is but the consumption of one's capital in premature dividends on his investment. Large immediate profits, whether in agriculture, manufactures, banks or railroads, are almost always deceptive, and frequently lead to unwise action from misplaced confidence.

Accounts from Western Africa state that thirty varieties of cotton have been found growing spontaneously in that country. A missionary says he has stood erect under the branches of a cotton tree, in a Goulch village, so heavily laden with bolls that it was propped up with forked sticks to prevent it from breaking down under its own weight. The cotton was equal to that of any country.—The natives manufacture cotton goods extensively. Western Africa also abounds in coffee. The whole land is said to be covered with it. In Errevals and Kaffa 200 pounds can be purchased for a dollar. A single tree in Monrovia yielded four and a half bushels in the hull at one time, which made 31 pounds when shelled and dried.—*Richmond Whig.*

☞ All wet land should be drained.



American Cotton Planter.

MONTGOMERY, ALA., JUNE, 1853.

N. B. CLOUD, M. D., EDITOR.

Our Agents.

WM. STRICKLAND, Book-seller, No. 28, Dauphin street; BOULLEMET'S LITERARY DEPOT—corner of Royal and Dauphin street; H. H. CARVER & Co., Battle House Book Store, Mobile; from any of whom the back numbers may be had.

A. P. PFISTER, Exchange Corner; C. R. HANSFORD, Market street, Montgomery.

With *The American Cotton Planter*, our agricultural friends will find all the new and valuable publications of the day, either literary or agricultural, at the above-named Book Stores.

Mr. AMOS TRAVIS is our agent at Gainesville, Sumter county.

Mr. N. PLUMB, Sparta, Conecuh county.
E. B. FOX, Sandy Ford, Fla.
Capt. J. JACK, Havana, Greene county.
WM. G. BREWER, Tuskegee.
H. C. BISSELL, Carlowville.
DR. WM. CUNNINGHAM, Burnt Corn.
DR. J. F. DORTCH, Camden, Ala.
E. J. CAPELL, Esq., Rose Hill.
ISAAC PARKS, Oak Bowery.
DR. BATT PETERSON, Clayton.
JAS. MONTGOMERY, Fife, Ala.
N. A. MCMILLAN, Canton.
DR. J. E. POELLNITZ, Montpelier.
G. M. REYNOLDS Mr. TURNIR, Mr. B. M. CLARK, and Mr. M. P. DOUTHIT are our traveling agents.

☞ In the hurry and dispatch of closing up our matters for last month, that we might promptly get out the May number of our paper, we neglected to direct the attention of our readers to the communication in the May number, over the signature of "S." on the "Policy of the Planting States." We ask every man to read it carefully, and think of it. The subject is to be continued. It is written by a practical man, a cotton planter, and a gentleman who has grown up with the State of Alabama, though, we believe, a Georgian by nativity.

COTSWOLD, OR LEICESTER SHEEP IN ALABAMA.—We have just room to say to our friend and subscriber, Col. John M. Burke, of Willcox County, that the notice and discription of his fine lambs, of the above named breed of Sheep, shall appear in our next number, his letter having come to hand just as our June number is going to press.

Correspondents.

We have received communications since our last, from Dr. M. W. Phillips, of Mississippi, Wm. DeForest Holly, Mobile, "W. P. G.," "D. C. S.," and "R. R. W."

Somebody at Fault.

On the fourth day of May, a letter was received from our Post Office, Lockland, Macon County, Alabama, containing a communication, designed for the April number of the Cotton Planter. This letter was mailed at the Post-Office at Mobile, as appears from the stamp, or post date, "March 24th," being about forty days "en route" from Mobile to Lockland. This is annoying to both editor and correspondent. The superscription and direction of the letter are in a plain and fair hand—Dr. N. B. Cloud, La-Place, Lockland P. O., Macon County, Alabama.

Our readers may not feel much interest in this, but some of them will regret, doubtless, that through the neglect or carelessness of men *paid* to give prompt attention to the mail business, they have been prevented getting, in April, a most valuable communication in regard to the Fig, its characteristics, culture &c.

We publish the article in this number. We are pleased to be able to commend it to our readers, as the result of much observation and experience with this most valuable, but too much neglected fruit.

In this we charge no individual Post Master—we simply state *the facts*, in the hope that our rights as editor, and the rights of our correspondents may hereafter receive appropriate and prompt attention.

Agricultural Convention of the Slaveholding States.

Delegates from six of the Slaveholding or Planting States assembled in the city of Montgomery on the first Monday of May, as per adjournment from Macon, Georgia, the full proceedings of which will be found in this number of the Cotton Planter. Though the assemblage was not so large as we desired to see, yet it was in every respect highly satisfactory. Gentlemen of experience, of talents and of brilliant acquirements, from various sections of the planting States, having turned aside from the political scrambles of the day, to concert measures for the promotion of a system of improvement in the science and practice of our industrial pursuits, give the most indubitable assurance that the importance of this subject is engaging the attention of our planters. And it is most extraordinary, that the subject has been delayed thus long, in a country and among people so peculiarly circumstanced, in regard to our labour and industry. We know there are among us, many planters, and most excellent citizens too, who say we are not ready for scientific agriculture, for a system of economic and proximate perfection in our agricultural operations, our country is too new, the energy and migratory habits of our people not sufficiently subdued. But we insist upon it,

that the propitious time has fully come, and we urge the now maiden soil of our country and the energy of our people as the sheet anchor of success. Who will think it wise, for a moment, that we should plod along, step by step, tediously through all the routine of experiment and improvement of our fatherland, England, to find out for ourselves only what they now know in improvements in science and art of agriculture? How much more wise to fall in at the present more advanced point, where we find their improvements, with any and all improvements, which, in their results, furnish evidence of utilty and value? An agricultural Association of the Slave-holding, or Planting States has been organized, the objects of which are fully set fourth in the Constitution. It is submitted to the favourable consideration of the planters of the South-west. There were fifty-seven members joined the society, after the adoption of the Constitution, in Montgomery, and in accordanca with the requirements of the Constitution. We hope many others will do the same, previous to the next meeting of the Association, in Columbia, South Carolina, next November.

[FOR THE AMERICAN COTTON PLANTER.]

Hiving of Bees.

DALLAS COUNTY, ALA., April 18, 1853.

DR. N. B. CLOUD—*Dear Sir:* Having time and space, I will give you a short article on the Hiving of Bees—the dificulty of which deters so many from raising honey and wax. Should you think it worth a place in your excellent journal, you can use it, if not, you need not fear hurting feelings in not publishing it. It is too late to be of much service in the southern country, this season, but will do some the next.

Bees, when swarming, never fail to settle upon some tree, limb, or bush—I presume, for the purpose of collecting all of the swarm together, so that those that come from the old hive last, may have an equal chance of going off to the tree or hole selected for their future home, with the first. Now the earlier in the season, usually, the longer they will remain, when they settle, hence they sometimes lie until the next day. In March and April, and scarcely ever until then—during May and June. They scarcely ever swarm as late as the last of June, in this climate. Now, until they have made up their minds to leave for their future home, it is impossible to drive them off. Hence, you need not fear, that any measure you may adopt towards them, will run them away (the common expression.) Now, possessing a knowledge of these facts, early in the season, I have no hesitation in suffering my swarms to hang, when they settle, until night, particularly, should they come out after 12 o'clock, but if otherwise, having prepared my boxes for the purpose, as soon as I see where they intend to alight, if not satisfied with the place, i. e. if it is still inconvenient to put them in the box from that place, I procure me a gourd, with a good long neck, and stick a long pole into the neck, having first sawed the neck off, then saw a small piece off of two sides of the body of the gourd, and fill the saw with rags and a small portion of sulphur sprinkled on them, then set fire to them, and getting it to smoke well, place the gourd so that the fumes of the sulphur may pass directly to the bunch of Bees, and it is but a few seconds before they will all leave that place and seek another.

Now the secret of success, in my plan, is, that the air becoming impregnated with sulphur fumes, or from some other cause, to me unknown, they will, nineteen times in every twenty- come lower, for every time that you make them change their place of settling. I recollect one instance in which they even settled directly upon the ground. That might have been owing to some accident that may have happened to the Queen Bee, but whether or not, they were hived and did well, so the injury, if any, must have been slight. I have smoked them from place to place, for an hour, they having changed the place of settling, some eight or ten times. This I keep up until they settle at some very convenient place. Some persons there are, I know, who will not adopt my plan, for fear of driving the swarm to the woods, but whoever can drive a swarm to do so, can do what I never did, and I have practiced this plan for over six years. Last year I hired twenty-one swarms, the produce of eight old hives, some of the first swarms that came out having sent forth a new swarm, and one or two as many as two.

Now, sir, you have the indiscriminate right to, and should you think it worth a place, shall be pleased to give you something more, if not about Bees.

Having some facts in connection with husbandry that, I think, is of some importance, will be pleased to furnish them to you, should you desire it.

With respect your
Obedient servant,
D. C. S.

Plantation Economy.

[FOR THE AMERICAN COTTON PLANTER.]

No. 7.

Dr. N. B. Cloud—*Dear Sir:* In my former article of this date, I was drawn off from my purpose by the train of ideas which got uppermost in my mind. I make no pretensions for being very methodical, not caring for any fame. I have been ridiculed before the public, in my own county, and before a people assembled in a church, and by a preacher, and by a man, too, upon whom it was intended to confer a title of "D. D." (but there was some mistake made, and they made a very small matter of it, by conferring a "d. d.,") and ridiculed, for what think you? Not being able to write a gramatical sentence. I state this, with the intent of letting your know that they need not look for any thing more than the matter I have uppermost in my mind, and, if there be any small "d's" among your readers, to beg they will skip over my article.

When I sat down and referred to under ground draining, and making investments, it was with the view of eliciting thought upon an investment in the land we all own, and thinking it would be more profitable in twenty-five years, than adding acres to a worn estate, and more negroes to assist in wearing all out, I manured, in 1840, with stable manure, a small piece of land immediately in front of my house, for some beans, corn, &c., that I had received and was testing. There are now peach trees on it, a small nursery extending two hundred and fifty yards, north and south, as the same flat and the same grade of land. The trees on the manured part are much larger and thrifter. Every year something has been planted thereon since the above date, and I have taken what good judges believed was an average of a five hundred pound bale, while in the same row, with no manure, not over a three, or four hundred pound bale. If manure will tell on this piece for thirteen years, we need only improve one acre per hand, each year, to soon restore our land. Will it not pay better than to employ capital in buying more acres, or more negroes? If this estate is now worth twenty thousand dollars, and I can use capital by fencing, draining, hill side ditching, making, saving and hawling out manure, so as to increase my nett income from three thousand dollars, why is it not better than adding one fourth more land and one fourth more negroes? Be there not less risk? Can it not be done? I must speak of myself, and let others try for themselves. I have a forty acre field, square four hundred and forty yards each way, including a ditch, fence and hedge around north, south and east sides. In 1838, I was ridiculed by men who thought they had seen enough to know, for cultivating said field, yet I have taken from it a crop, every year since, save one—did last year save forty-one thousand pounds of cotton, only picking over my crop twice, one-third of hands making such, August, September and October. This year I have, up to the fifteenth of September, gathered thirty-eight thousand six hundred and thirty-seven pounds, and upon carefully examining the crop, I counted numbers of stalks, showing, on said days from forty to forty-five grown bolls—certainly a fair calculation to put an average of twenty bolls, and that my prospect was good for fifty thousand pounds. "Mark well," here is a field of forty acres which was pronounced too poor to cultivate, thirteen years ago, the crop last year pronounced at only five or six hundred pounds, and such a year fatal to such land. This year it has been pronounced as good for five hundred, when hands were picking, yet I have seven hundred and thirteen pounds per acre now out, and I am certain I had enough left to have made me an average, in all, of a bale of four hundred pounds per acre, and who thinks I could have lost less than one, or two hundred pounds per acre, last year—picked once in September and again about the firt of December, after our November storm. I have used deep plowing, about five or six inches, burnt nothing, never in cotton two years in succesaion, and now it will be three years, as I have, for two years past, been using all cotton seed, stable, lot and hog pen manure upon it, intending to make sixty thousand pounds of seed cotton upon it, or give up that I am no planter. And I will do so with every acre in cultivation on this place, cropping yearly in corn, cotton, and oats, using all manure on cotton land, and never planting cotton on this land without having corn and corn, or corn and oats, or corn, corn and oats, to precede. I sow down about one-half bushel of peas per acre when in corn, and if oats follow, the peas come up and cover all stubble.

I have this day, on twenty acres of such land, nine mules, eight brood mares, five mule colts and three horse colts, all weaned but one, and have had, for three months, three or four mares and colts upon it, with grass and vines every where. The ten head of mules and mares are only on a day now and then, being engaged in gin and wagon, usually. What would be the cost to manure ten acres, I know not, what would be the cost to under drain ten acres, I know not; but I do know both together would enhance a three hundred and fifty acre tillable plantation to produce as ordinarily does a five hundred acre place. On this, I mean, the place which now averages nine hundred pounds, per acre, ought to be improved to yield one thousand three hundred and fifty pounds, or a bale, per acre. And who will deny.

Brethren, we must do more than we have done for twenty years, or we are sold to the yankees, whether living in Boston, New Orleans, or Mobile. Pardon this? I do not know lines, I do not intend to know sections, unless it be where a man makes his money here to spend in New York or Boston, as Irish land holders spend Irish blood in London. May God in his infinite mercy shield us from that. I care not where the man is from, so he is one of us—belongs to the soil—a part of it. This is rather too much digression, but my readers must take me as they find me—as always truly thine.

M. W. PHILIPS.

[FOR THE COTTON PLANTER.]

Water Gate and Water Fence.

COTTONWOOD CREEK,
Marengo, County, Ala.

DR. N. B. CLOUD—*Dear Sir:* Yesterday I received your valuable work, gotten up in much better style, and filled with much more useful and interesting matter than I believed it possible for a monthly, at one dollar per year. But God speed your work, and may it prove for us what the American Farmer has done for Maryland and Virginia. I see in your first number, you invite contributions from the whole planting States, and as I believe as much information is to be derived from the practical farmer as from the theorist, who can write articles on farming, or constitutions, if need be, by the gross, I have determined, although a manager, to contribute my mite for the advancement of an interest, and consequently a people with whom I have been reared, and with whom I intend to be buried.

I propose to give to the farming world a Water Fence that water cannot move, and a Water Gate that is undisturbed by freshets. I will denominate the fence as a picket fence. First, then, cut and maul some white oak rails, ten and a half feet long, of good size; cut a ditch three feet deep, as narrow as will allow your men, or ditchers, to stand up in it, then put your rails in the ditch, and incline them against the post of the water gate, about an angle of forty-five degrees, commencing with a rail not more than twelve inches long above the ground; over that rail drive two stakes with a maul on each side, that have first been well sharpened, until they refuse to go, or until you have driven them within one foot of the rail; then put another rail between the stakes, observing to keep the foot at about the same distance from the first rail throughout the whole length. Again, repeat the staking operation, dropping back about one foot, and so on, until you reach the height of four feet (this I believe to be the true height) as the fence is so rugged nothing will undertake it, and the lower the better, so as to allow logs, trash &c., to pass over, during a freshet. After your fence is completed to high water mark, have the ditch filled up with rock, if they can be had, in which your rails are put, and have them well rammed.—This will make a fence that water cannot move, or the weight of water; but strengthen it. And to move one rail you have to move the weight of the whole fence.

The Water Gate is somewhat difficult to describe. My gate is fifty-two feet wide, the post twenty-four feet long, fourteen inches square, and set in the ground six feet, with braces from the top of the post, stretching back at an angle of 47 degrees, and six feet in the ground, rammed with rock; then plank are pinned on the post and braced so as to prevent the least giving way. Great care must be taken to hang the gate four feet higher than high water mark, so as to admit logs of the largest size to pass under with impunity, and to prevent any hanging, and to make doubly sure, the gate will raise by the force of water, it must be planked on the butt or upper side, with three-quarter inch plank, very close. I have shown you the

best representation I can, of the fence and gate, which you will find enclosed, and I have only to add, I have seen trees of the largest size, roots and all, pass under this gate, and any quantity of logs trash, &c., pass over the fence. I hope, sir, your readers will be able to understand my description of the Gate and Fence, and they may receive as much benefit from it as I have.

W. P. G.

Accompanying the communication of "W. P. G." we have a draft of the water gate and fence therein described, and so highly recommended. We should have been pleased to have had it engraved, and should have done so, had the circulation of the Cotton Planter have warranted it. A well executed cut, which our friend, Mr. Swan, could have furnished us, would have facilitated very much a correct comprehention of such gate and fence.

We have no doubt, but many of our planters, who have plantations lying on large creeks or water courses, subject to rise without their banks, will be interested in the information contained in the above article.—[Ed.

Cotton Oil.

A few days ago, says the Mobile Register, we published a telegraphic dispatch, briefly stating that a chemist in Egypt had discovered a method of extracting oil from cotton seed. We thought it a strange announcement at the time, as the process could not be attended with much difficulty.—It now appears, however, from fuller accounts, that the novelty and utility of the discovery consists in *clarifying* the oil, and rendering it fit for burning fluid, for manufacturers' uses, and for making soap. For these purposes it is said to be well adapted. The Viceroy of Egypt has conferred on the discoverer the exclusive right to clarify and sell the oil for ten years. We shall look with interest for further accounts of this discovery, and of the value and uses of the clarified Cotton Oil, as it may prove to be an invention of importance to Southern planters.

Sandy lands can be most effectually improved by clay. When such lands require liming, or marling, the lime or marl is most beneficially applied, when made into compost with clay. In slaking lime, salt brine is better than water.

Mould is indispensable in every soil,—and a healthy supply can alone be preserved through the cultivation of clover, and the grasses, the turning in of green crops, or by the application of composts rich in the elements of mould.

[For the American Cotton Planter.]

Useful Recipees.

Fayetteville,
Talladega Co., Ala.

Dr. N. B. Cloud—*Dear Sir:* You may inform your readers that a small portion of the hard substance that grows on a horse's legs, below the knee and hock, given to a horse, is a sure preventive against founder. I have known it a long time, but have never seen it published. I am of the opinion that about as much as would lie on a dime, swallowed by a horse, is a preventive for life. I have tested it for a number of years, in horses that were much addicted to foundering, previously, and found it infalible.

You can likewise tell your readers that to rub warts with polk root a few times will remove them without suffering the least inconvenience. Many persons use severe remedies. Take the bark off the roots when fresh from the ground, while juicy.

Every body ought also to know, if they do not, that to rub the buds of the Balm of Gilliad tree on a ringworm is a certain cure, without hurting any.

R. C. W.

[For the Cotton Planter.]

Ficus Carica, or Common Fig Tree.

Oakland, Mobile, March 23d, 1853.

Dr. N. B. Cloud—*Dear Sir:* The gigantic efforts now making by the various pomological and horticultural societies, to raise and acclimatize new seedling varieties of home and tropical fruits, trees, plants, &c., adapted to the various sections of the United States, induced me to trouble you with this communication, and, at the same time, to urge upon the attention of our southern planters and horticultural friends, the peculiar fitness and adaptability of the climate and soil of the southern States, to the growth and perfection of the ficus carica, or common fig tree. Probably no fruit in existence is better calculated to promote health, so easily grown, and so little liable to be affected by blight, insects, &c. This fact has been illustrated to the satisfaction of that "old inhabitant," by those who have raised magnificent fig trees in our city and its vicinity, ranging from eight to fifteen inches in diameter, and from twenty-five to thirty feet in length, and which has withstood the vecisitudes of our climate during the last half century. The many varieties of this

peerless ond magnificent fruit which have been successfully grown and fruited in this city and its suburbs, have satisfied those of my friends who were born and raised in France, Italy, and on the shores of the Mediteranean Sea, (the home of the fig,) that the fruit grown and matured in the vicinity of Mobile, is as fine and luscious as in its native clime. Who then, let me ask, is unable to plant and cultivate a few varieties of this admirable fruit, so healthy and peculiarly adapted as a "southern home" desert and table fruit. Talk of "Hovey and Peabody's" fine strawberries.—Who would exchange a splendid dish of *green Ischia figs*, with their drop of honey at the crown, their delicate green flesh, rich, sweet and delicious, for breakfast, &c.

The intrinsic value of this fig as a desert fruit, for the table and preserving, (and nothing can equal it for that purpose) is the *ipse dixit* of my friends, from various specimens tested at my table, and which was manufactured by Mr. H.) as also its great value for poultry, &c., &c., is only to be estabiished by those who have grown the fruit to perfection and experimented with it for culinary purposes &c. During the last month I have planted, at "Belle Rose Cottage," some five hundred cuttings and rooted plants of the creole varieties, obtained during a series of years, from various sources, and from approved and well known varieties. I therefore flatter myself, (providence permitting,) to be enabled to show you, within a few years, the fig orchard of the south, and one that embraces all the choice varieties to be had at home and abroad, with new and then an approved seedling.

To those of your readers unacquainted with the history, origin, and varieties of the family ficus, I respectfully append the following historical and statistical information. There are forty-six species, forty-five of which are principally ornamental evergreens—viz: the Bengal, Superstitious, Religiosa, Elastic Gum, Otaheite, the Australis, and the Bengalensis, or Banyan tree, of India, &c., &c.

The Ficus Carica, or common Fig is a native of Caria, in Asia, and naturalized in the Levant, south of Europe and America, where it forms large trees, as in the vicinity of Mobile. It is with us, as is the case in every part of Europe, a deciduous tree; while in tropical countries it is evergreen. "The fig was introduced into England by Cardinal Pole, in 1525, and still exists in the garden of the Archbishop, in Lambeth. Some of these trees cover a space of fifty feet in length, by forty in breadth. They are of the white Marseilles sort, and bear delicious fruit." In England, (the climate being hurried,) it is cultivated merely for the desert. In fig countries, its cultivation becomes a matter of great importance as an article of exportation and as an article of food, which they prepare in a variety of ways, both in a ripe and unripe state. There are few tables in France and Italy, which do not produce this fruit in some shape or other, either fried or stewed, or as an addition to their desert. We are supplied chiefly with our preserved figs from Spain, the south of France, Italy and the Isles and shore of the Mediteranean Sea. It is a singular fact, that fig trees should not be planted near meat safes or larders, as they have the singular property to intinerate the contents sooner than may be desirable. Philips (in Pom., Brit.,) relates an experiment made upon a haunch of venison, which had lately been killed, being hung up in a fig tree when the leaves were on, about 10 o'clock in the evening, and was removed before sun rise in the morning, when it was found "*a la Francais,*" in a perfect state for cooking."

The number of varieties of this fruit are supposed to be great. in fig countries, they are produced from seeds so readily, that many varieties are yearly springing up. It is supposed that there may be, about twety-five distinct varieties worth cultivating. Among which, are the Brown, Black, Groen, Yellow Ischia, the large white Genoa, Early White, Black Genoa, Blue or Purple, large Black Naples, Italian, or Brown Naples, Brown Turkey, Brunswick, Hanover, or Madonna, Lee's Perpetual, White Merselles, Nerei Pregustata, and Fig Cileste.

Respectfully your
Obedient servant.
WM. DeFOREST HOLLEY.

CARROTS.—When young and small need only be washed without scraping; leave on about an inch length of the green; put them in a stew-pan with hot water to cover them, and a teaspoonful of salt: let them boil fast for twenty minutes, then take them into a dish, put butter and pepper over, and serve, with boiled meat and poultry.

Agricultural Convention of the Slaveholding, or Planting States.

Pursuant to adjournment of the Convention of Planters, preliminary to the organization of an Agricultural Association of the slaveholding states, from Macon, Georgia last October, delegates from six of the slaveholding, or planting States, assembled in the city of Montgomery on Monday, the 2d day of May 1853, when, after a state reception in the Capitol, by Gov. H. W. Collier, the convention was temporarily organized by calling Dr. W. C. DANIELS of Georgia, to the Chair, and Dr. CHARLES LUCAS, of Alabama to act as Secretary.

Dr. Daniels, on taking the chair, addressed the convention at some length in an interesting exposition of our peculiar labour and its adaptedness to our great cotton industry. On motion of N. B. Powell of Alabama,

Resolved, That a committee of five be appointed by the Chair, to select officers to preside over this Convention.

The Chair appointed,

DR. N. B. POWELL, Chairman,
H. W. VICK, Mississippi.
JOHN GOLDTHWAITE, Alabama.
J. B. COBB, Mississippi.
S. S. B. TURNER, Georgia.

On motion of judge B. S. Bibb, of Alabama.

Resolved, That a committee of thirteen be appointed by the Chair to report business for the action of the convention.

The Chair appointed,

B. S. BIBB, Chairman.
Gen. ELI C. SHORTER, Alabama.
Dr. N. B. CLOUD, Ala.
W. L. YANCY, Ala.
E. D. KING, Ala.
G. H. YOUNG. Mississippi.
D. W. LEWIS, Georgia.
GEO. REESE, Alabama.
Mr. CHASE, Florida.
T. S. JACKSON, Florida.
CHARLES A. PEABODY, Alabama.
JAMES M. CHAMBERS, Georgia.
Dr. C. BELLENGER, Alabama.

On motion of Mr. A. Hull, of Georgia, the Chairman, Dr. W. C. Daniels, of Georgia, was added to this committee.

On motion of Mr. Young, of Mississippi, the delegates were requested to come forward and register their names, by States, when it was ascertained there were delegates in attendance from six States, numbering, in all, one huddred and sixty.

On motion, the Convention adjourned to meet at four o'clock in the afternoon in Estelle Hall.

FOUR O'CLOCK SESSION.

The Convention met as per adjournment, when the committee of five reported through their Chairman, Dr. POWELL, the following named gentlemen as officers to preside over the deliberations of this Convention.

GEORGE R. GILMER, of Georgia, President.

H. W. VICK, of Miss.
GEO. H. YOUNG, Miss.
W. ANDERSON, Fla.
Dr. W. C. DANIELS. Ga.
} Vice Presidents.

Dr. CHARLES LUCUS, Ala.
Dr. N. B. CLOUD, Ala.
} Secretaries.

The President, Gov. GILMER, was conducted to his seat by Judge Bibb, when he addressed the Convention in a spirited and stirring appeal to the patriotism and devotion of its members in behalf of the objects of their assemblage.

After which Prof. Toumey, of the University of Alabama, was introduced to the Convention, who delivered an inieresting scientific lecture on the importance of agricultural chemistry.

On motion the Convention adjourned to meet Tuesday morning at 10 o'clock.

TUESDAY MORNING SESSION.

The Convention assembled as per adjournment, when the committee of fourteen made their report, consisting of:

1st. A Constitution for the Agricultural Association of the Slaveholding States.

2d. Resolution marked "A."

3d. Resolution marked "B."

[*See appendix.*]

All of which report was received and concurred in by the Convention.

After which Col. James M. Chambers, of Georgia, presented to the Convention a document from the Rev. Thos. F. Scott, of Columbus, Georgia, which document was, on motion of Mr. W. L. Yancey, of Alabama, given into the hands of a committee of three, appointed for that purpose by the President, consisting of

W. L. YANCEY, Alabama.
G. H. YOUNG, Mississippi.
JAMES M. CHAMBERS, Georgia.

with instructions to report to this meeting.

A second document, presented to the Convention by Dr. C. Bellenger, of Alabama, from citizens of Texas, was also, on motion of Dr. Bellenger, given into the hands of the same committee, with instructions to report to this meeting.

On motion of John H. Newton, of Athens Georgia, the following resolution was adopted by the Convention:

Resolved, That in the opinion of this Association, it is expedient to establish at some central point within the Southern States, an Agricultural Institute or College, designed as a normal school for instruction in the practical duties of a planter's life.

On motion, the President appointed the following gentlemen a committee under this resolution with instruction to report to this session of the Association.

JOHN H. NEWTON, Georgia.
Dr. W. C. DANIELS, Georgia.
Dr. N. B. POWELL, Alabama.
CHARLES A. PEABODY, Alabama.

At this hour, Mr. J. B. Cobb was introduced to the association, who delivered an interesting address on the influence and destiny of our cotton industry.

On motion the association adjourned to meet at 4 o'clock.

FOUR O'CLOCK SESSION.

The Convention assembled pursuant to adjournment, when Mr. Robert Nelson, of the Troup Hill Nurseries, Georgia, was introduced to the Convention, who delivered a practical lecture on the subject of horticulture and fruit culture at the south. After which,

Col. James M. Chambers, of Columbus Ga., was introduced to the Convention, who delivered an address on the subject of the Agricultural Press and its influence for good.

On motion the Convention adjourned to meet at 10 o'clock on Wednesday morning.

TEN O'CLOCK SESSION—MAY FOURTH.

The Convention assembled as per adjournment.

On motion of Mr. W. L. Yancey, their Chairman, the committee on documents reported.

Also, on motion of Mr. John H. Newton, the committee to whom were referred the resolution on the subject of an Agricultural Institute, made their report. Both these reports were laid on the table temporarily by the Convention, the special hour having arrived for the address of the Hon: Robert Toombs, of Georgia.

Mr. Toombs was introduced to the Convention, who interested a large assemblage of gentlemen and ladies with a forcible address on the subject of the duties and objects of this Association.

After which the Association went into an election of its officers under the Constitution, which resulted in the selection of the following gentlemen:

Hon. George R. Gilmer, of Georgia, President.

H. W. Vick, of Mississippi,
Mr, Asbury Hull, Georgia.
Mr. B. T. Glover, Virginia.
Dr. J. A. Whetstone, La.
Dr. R. W. Withers, Ala. } Vice Presidents.

Dr. N. B. Cloud, Ala., Secretary and Treasurer.

The Agricultural, Association of the Slaveholding States being thus organized, adjourned to meet at three o'clock, P. M., in the Hall of the Mechanic's Institute.

THREE O'CLOCK SESSION.

The Association assembled according to adjournment in the Hall of the Mechanic's Institute. The first business in order, being the reports of the committees, temporarily laid on the table in the forenoon, they were called up and read in order, when the report of the committee on documents, with said documents, was referred to the Executive Council. And the report of the committee on the expediency of an Agricultural Institute, was recommitted with the original resolution to a new committee, consisting of three gentlemen from each State represented in this Convention.

Committee appointed by the President:

Messrs. J. B. Cobb, G. W. Young, and H. W. Vick, of Mississippi.

Messrs. D. W. Lewis, Jas. M. Chambers, and W. C. Daniels, of Georgia.

Gov. H. W. Collier, Dr. C. Bellenger, and Chancellor W. W. Mayson, of Alabama.

Dr Lockhart, Mr. Anderson, and Mr. Chase, of Florida.

Hon. Washington Barrow, Dr. Jas. A. Whetstone, and James F. Eastland, of Louisiana.

B. T. Glover, Virginia. Ballance to be supplied.

John H. Newton, of Athens, Ga., Chairman.

On motion of Gov. Collier, of Alabama,

Resolved, That as a means of imparting increased dignity and honor to agriculture, and of giving a more intelligent direction to efforts to improve and fertilize the soil, and to prevent an injudicious and unnecessarily expensive waste of labor, it is the opinion of this Association that the colleges and universities of the south should impart instruction in agricultural chemistry, and where the State has established no agricultural school of a high order, the legislatures of the several States where there are colleges or universities dependent upon State aid or subject to State legislation, should promptly provide for a Professorship, assistant to the Chair of agricultural chemistry, the duties of which, shall be to analize soils, manures and vegetable productions.

This resolution was unanimously adopted by the Association and refered to the Executive Council.

On motion of Mr. A. Hull, of Georgia, the Association adopted the following resolution:

Resolved, That copies of addresses and essays delivered and read before this Convention, be requested from the gentlemen making them, to be taken charge of by the Executive Council, and filed for future reference or publication, as may be determined on in the future transactions of the Association.

It was further ordered that the Secretary procure said addresses and essays at the earliest convenience of the gentlemen delivering them.

The President here announced the Executive Council under the Constitution.

EXECUTIVE COUNCIL.

Mr. E. A. Holt, Montgomery. Ala.
Dr. C. Bellenger, " "
Judge B. S. Bibb, " "
G. H. Young, Mississippi.
Walker Anderson, Florida.
Col. G. A. Summer, South Carolina.
Jas. M. Chambers, Georgia.
Ex-officio. Geo. R. Gilmer, Ga., President.
N. B. Cloud, Ala., Secretary.

On motion, the following resolutions, offered by Gov. W. H. Collier, of Alabama, were unanimously adopted.

Resolved, That it is important to the agricultural and industrial interests of the south, that a geological and agricultural survey should be made of the several States that participate in this Association. Therefore, we do

most respectfully recommend to the legislatures of these States to cause such surveys to be made at as early a day as may be.

2d. *Resolved*, That the Secretary of the Association transmit a copy of the foregoing resolution to the Governors of the States referred to.

On motion of Dr. W. C. Daniels, of Georgia,

Resolved, That the next meeting of this Association be held in Columbia, S. C., with the South Carolina State Agricultural Society, in November next.

On motion of Dr. R. W. Withers, of Alabama,

Resolved, That the thanks of this Association be extended to the several gentlemen who addressed the Convention during its session.

On motion of G. W. Young, of Mississippi,

Resolved, That the thanks of this Association are tendered to the citizens of Montgomery, for their individual and public hospitality.

On motion of Mr. A. Hull, of Georgia,

Resolved, That the thanks of this Association be returned to the societies which have so liberally supplied us the use of their halls.

On motion of Col. J. B. Cobb, of Mississippi,

Resolved, That the thanks of this Association be offered to the President of this Association, for the able and dignified manner in which he has presided over its deliberations. And also to the Secretaries, for the faithful discharge of the duties assigned them.

On motion, the Association adjourned to meet in Columbia, South Carolina, in November next. The day to be made known in due time by the Executive Council.

GEORGE R GILMER, *President.*

N. B. CLOUD, *Secretary.*

APPENDIX.

CONSTITUTION OF THE AGRICULTURAL ASSOCIATION OF THE SLAVE-HOLDING STATES.

ARTICLE, 1st. The chief objects of such an Association, would be to the exclusion of all subjects purely political.

To improve our own agriculture, yielding peculiar productions through the agency of a normal labor, requiring a distinct economy, and dependent on a climate of its own.

To develop the resources and unite and combine the energies of the Slaveholding States, so as to increase their wealth, power and dignity, as members of this confederacy.

To enlist and foster those scientific pursuits, which reveal to us the elements and character of our soils, instruct us in the presence of those magazines of fertilizers which Nature has with so bountiful and considerate a hand provided for the uses of the industrious and the enterprising; and search out the histories and habits of the insect tribes which destroy (it is believed) annually a fifth of our crops, and supply us with a knowledge of them which may enable us to guard against their future ravages.

To promote the mechanic arts, directly and indirectly auxiliary to agriculture, and by a generous confidence and liberal patronage raise those engaged in them to a social position always the just reward of intelligence, industry and good conduct.

To exert an influence in establishing a system of instruction which will make Christians as well as scholars of our children; which, in arming the rising generation with the instruments of knowledge, will instruct them also in their proper uses; impressing upon them, from first to last, that (especially under our form of government) private worth constitutes the aggregate of public good, and that no one can disregard his duties to those around him without positive injury to himself.

ART. 2d. This Association shall be composed of such citizens as taking an interest in its objects shall desire to become members, and shall signify such intention in writing to the Secretary.

ART 3d. There shall be annually elected a President to preside over the meeting of this Association. The President to be first elected under this Constitution shall be succeeded by a new election to be made at the annual meeting 1854.

ART. 4th. The delegates and members from each State present at any annual meeting may nominate to this Association a Vice President. The oldest Vice President present shall preside in the absence of the President.

ART. 5th. A Secretary and Treasurer shall be elected who shall serve during the pleasure of the Association. It shall be his duty to keep a fair record of the proceedings of this Association and of the Executive Council, and to register the name and address of each member, and to superintend all publications under the direction of this Association, and, in its recess, of the Executive Council. He

shall receive and preserve all essays and addresses, and all such communications as may be addressed to him for the use of this Association. As Treasurer he shall collect subscriptions and contributions, and receive all donations and legacies made to this Association, and disburse the funds under its direction when in session, and, at other times, under that of the Executive Council. He shall make a report of the state of his accounts at each meeting of this Association.

ART. 6th. An Executive Council shall consist of nine persons, not more than three of which shall be selected from any one State, three of whom shall constitute a quorum. The President and Secretary and Treasurer shall be ex-officio members of the Executive Council.—Five members of the Executive Council shall be appointed by the President, at this session of the Convention, one of whom shall vacate his office at the expiration of two years from this term, and one thereafter annually, whose place shall be filled by appointments of the President as the vacancy occurs.

The Executive Council shall have charge and sole management of the income of this Association, and the entire control and direction of all publications, and the superintendence of all the affairs and concerns of this Association, when not in session, and shall fix from time to time the salary of the Secretary and Treasurer.

ART. 7th. The annual meetings of this Association shall be held in succession in each of the Slaveholding States, the time and place to correspond, as nearly as practicable, with the annual agricultural meeting of the State to be selected.

ART. 8th. Semi-annual meetings of this Association may be called by the Executive Council, to be held successively, in the Slave-holding States, to correspond, in time and place, as nearly as practicable, with the horticultural meetings of the State to be selected.

ART. 9th. Each member shall pay, on his admission into this Association, to the Treasurer, the sum of five dollars, and at each subsequent annual meeting, one dollar, which may be compounded for on payment of twenty-five dollars, which shall constitute him a life member, and entitle him to a copy of each publication of this Association.

ART. 10th. Honorary members shall be admitted by a vote of this Association, and be exempt from payment of fees and contributions.

[A.] This Association, impressed with the importance of annual agricultural fairs to the communities in which they are held, and satisfied of the great benefit that may be rendered to this Association, when held in conjunction with such State biannual fairs,

Resolved, That we recommend to the people of the several States interested in the objects of this Association, to organize State and county agricultural societies connected with biannual fairs.

[B.] *Resolved*, That each delegation be requested to furnish to the Chairman of this committee the names of such gentlemen as may be prepared to address this Association, together with the subject of the address, and that the Chairman of this committee be requested to furnish to the President the names of persons, together with the subjects of their address, for each day of the session.

MEMBERS OF THE ASSOCIATION.

Dr. W. C. Daniels, John H. Newton, Gov. George R. Gilmer, David W. Lewis, J. S. B. Turner, Charles A. Peabody, Asbury Hull, Robert Toombs, G. Bryan, W. B. S. Gilmer, and Col. James M. Chambers, of Georgia.

Dr. R. W. Withers, David Lordon, B. S. Bibb, James Dent, Samuel Jeter, Judge A. Martin, Dr. B. Johnson, James H. Smith, P. R. Gilmer, R. C. Shorter, Senior, T. B. Scott, B. F. Ashley, Dr. A. Saltmarsh, Dr. N. B. Powell, Dr. Charles S. Lucas, Dr. N. B. Cloud, Col. McGenny, Dr. J. H. Hall, Col. E. Harrison, W. S. Yancey, Thomas R. Beck, O. S. Jewett, J. D. Hopper, E. A. Holt, M. A. Baldwin, L. James, Thomas M. Cowles, W. L. Marks, W. B. Mathews, W. C. Bibb, Col. J. Darrington, A. V. Scott, Jas. P. Irwin, W. W. Mason, J. Goldthwaite, S. W. Harris, Charles Crommelin, Dr. C. Bellenger, Charles T. Pollard, and Gov. H. W. Collier, of Alabama.

Dr. J. A. Whetstone, of Louisiana,

Col. John Gilmer, H. W. Vick, Col. J. B. Cobb, H. G. Vick, and G. H. Young, of Mississippi.

From the Journal of Agriculture.

Thorough, or Rich Farming.

BY PROF. J. J. MAPLES.

This term has been generally adopted by the best European writers to express such a system of farming as would embrace the use of capital liberally, and at a maximum profit, in contradistinction to low farming, or the procuring of minimum crops, with no investments beyond the purchase of land and cheap workings.

Those who pursue high farming argue that it is both safe and profitable, and that they use their capital liberally to put the land in the best possible condition by under-draining, sub-soil plowing, convenient arrangement of cisterns, pumps, manure-houses, &c., &c., so as to have light expenses by labor saving arrangements, at the cost perhaps, of heavier original outlays.

The high farmer has analysis of his soils, and uses upon them, all the manure they are capable

of converting into plants; or, in other words, all that can be used with profit, instead of only so much as will only produce a crop. For such crops as are found to pay a profit for the labor, the soil is plowed two, three, or more times before planting; and where a thorough admixture of the manure through the soil is found to be more advantageous than simply to plow or harrow it in, a large cultivator, or stirrer, is liberally used for this purpose. For crops which are advanced materially by continued irrigation, even steam engines are kept in motion to insure the necessary supply.

Cattle on such farms are never pastured, but always fed in buildings, supplied with every convenience to save manual labor. The supply of water is always at hand, and readily led by gutters to the front of the animals. The arrangements for warming and ventilating are such as to insure a steady and healthy temperature and supply of atmosphere. The manures are rapidly moved as voided, and composted with as much inert vegetable matter as can be converted by its fermentation into useful amendments. The fluid excretiæ is led by gutters to masses of matter, which receive it and retain the volatile portions from evaporation.

If the soil is short of potash, soda, or any other constituents of the required crops, these are added; not directly to the soil, but to the compost heap, so as to advantage by their decomposing or chemical effects before going to the roots of plants.—Manures are never left immersed in water, parting with gases without undergoing proper decomposition; but the drainage of manure-heaps is daily returned to them, to supply the necessary amount of moisture to insure decomposition without burning or *fire-fanging*.

If ammonia is lost by steaming or overheating of manures, the drainage-cistern of the heap is immediately supplied with diluted sulphuric acid, or some soluble required by the compost, which changes the volatile carbonate of ammonia to the fixed sulphate of ammonia, and thus all the excretiæ of animals is saved in its best and most efficient form.

Some old style farmer may say, "This is all very well; but where is the money to come from, and when can you get it back?" We answer, as to the latter inquiry, that many men in England and elsewhere, as tenant farmers, have made large fortunes by high farming, while but few have done so by any other style of culture. Now, while free trade is paralyzing the efforts of the farmer, those who pursue high farming alone are able to succeed. We do not assert that all who spend much succeed as a consequence of such expenditure; but those who use their capital freely and *judiciously* do succeed, and find it more to their interest on bond and mortgage at the ordinary rates of interest.—Hundreds of tenant farmers in England are borrowers of capital on interest, extending the amount of their operations as their increased capital may permit.

How many farmers do we know in this country, who have heired fortunes, or become rich by the rise of property, and whose farms are of less value than their more industrious neighbors', from the want of capital properly applied to them! They loan out their surplus incomes at six per cent. per annum, when a part at least could be used on their own farms, at twelve per cent. with profit.

Let no man, however, attempt high farming, who thinks a fact becomes a falsehood by having been printed. He must have brains enough not to rail out indiscriminately at *book farmers*. He must even read books, until he knows how to answer the following questions, at least, and as many others appertaining to his calling as these may suggest:—

Do plants receive the whole of their nourishment from the soil, or part from the atmosphere? and what from each?

Do those received from the atmosphere, enter the plants above or below the surface of the soil? and, if in part below, what conditions of the soil are necessary for their reception?

By what means are these conditions of the soil to be attained?

How does moisture effect the vegetable economy?

To what depth will the roots of the plants enter the soil if properly prepared?

To what depth will the roots of plants enter the soil? and if not to an indefinite depth, why?

In what manner, and from what causes, do plants receive the constituents of manures below the surface of the soil?

Of those solutions of manures which filter downwards, what portions are lost to plants? or of those which rise as gasses, what portions escape into the atmosphere without being absorbed by plants?

and why? What modes may be adopted to arrest them until plants can make use of them?

Let those who would censure high farming find the farmer who can answer these questions, and they will find a successful votary of our art, and one, too, who can enjoy nature as his God intended he should. Such a farmer can find delight in observing nature's laws, and "*look through nature up to nature's God.*"

All these questions may be answered; and our readers will find them answered if they will read the *Journal* with the same care they would examine a mortgage when buying it. Some may say farmers have not time to become chemists and natural philosophers; but they should, for their own happiness and profit know so much of the science as to be able to read them understandingly, and to apply them readily.

It is not necessary that a farmer should be capable of analyzing his own soil, but only to understand the analysis when made. Because a farmer may occasionally have a lawsuit, he need not necessarily study law, and become a lawyer; and if an analysis will cost but five dollars, he is a lucky fellow if he does not pay more money to lawyers than to chemists.

But some say, they are too old, even to study so much as to understand an analysis, or to learn how to apply manures in accordance with it. If so, employ a consulting agriculturist to inform you, and pay him less for enabling you to double your crops than you now lose by wasting manures from bad management; and if you cannot find a more competent one, apply to us.

From the Southern Agriculturist.

Planting and Cultivating the Osage Orange Plant, and treatment of the Hedge.

In the first place, it is important to procure genuine and sound seed. The seeds of the Osage Orange are enveloped singly in the tough and fibrous substance composing the fruit or ball. Extracting the seed without injuring their vitality, is a slow and tedious process. In order to do it with greater facility, many unprincipled persons have resorted to scalding or to a high fermenting process, which entirely destroys the germinating principle of the seed.

The seed of the Osage Orange requires a high temperature to induce vegetation, and hence they should not be planted until the warm weather of Spring is established, say about the first to the tenth of May. About two weeks before planting, the seed should be placed to soak and remain in the water for three days. Not more than two quarts should be put in the same vessel. Turn the water off and cover the seed with a cloth and place them in a warm room and stir them daily. They should be kept sufficiently moist to induce vegetation. Should the weather prove favorable, the vessel containing the seed may be plunged into a hot bed. As soon as the germ begins to appear they should be planted.

The ground selected for the seed beds should be rich and should be plowed deep and thoroughly pulverized and finely raked. Lay the ground off in drills of one inch deep, wide enough to admit the passage of the cultivator. The seeds should be dropped about half an inch apart in the rows, and they should be covered by drawing the fine earth from each side, with both hands, forming a ridge one inch high. In six or eight days, if the season be favorable, the young plants will begin to break the ground. The ridge should then be removed with a fine rake. This method leaves the row clean and mellow, and gives the young plants a good start of the weeds and greatly lessens the labor of the first hoeing. These plants should be well cultivated throughout the season.

The hedge row should be plowed at least ten or twelve inches deep and eight or ten feet wide, in the fall; or, if the land is new, it would be well to cultivate a crop of corn or potatoes on it the year previous. If poor ridges occur in the row, they should be well trenched and manured, to insure uniformity in the growth of the hedge.

In the Spring, just previous to setting the plants, the row should again be plowed and well harrowed. The plants may be lifted from the seed beds with facility by two persons with spades, one on each side of the row; care should be taken not to mutilate the roots. Shorten the roots to about eight or nine inches in length and the tops to within one inch of the root.

Stretch a line where the hedge is to stand. Assort the plants, and set those of uniform size together. In setting the plants, run a long spade perpendicularly by the line to the depth of the root, making an opening *without removing the earth;* withdraw the spade and insert the plant

full as low as it grew in the seed bed. Press the earth to the root by entering the spade again just back of the plant, pressing the earth forward. Set the plants in this manner about ten or twelve inches apart, according to the strength of the soil, in a single row. After setting, the ground should be firmly trod on each side of the plants and again levelled off. In order to secure the advantage of requisite light, and a free circulation, of air, and to leave room for thorough cultivation, the hedge should never be planted within six or eight feet of any fence. The row should be kept free from weeds and be thoroughly cultivated during the season.

One great error has been committed by nine-tenths of the persons who have attempted to grow Osage hedges, and that is, they have been too impatient to complete the hedge before they had secured a foundation on which to base it. A hedge sufficiently firm and compact at the bottom *cannot be grown without severe and repeated* cutting back, in order to insure strength to the lower and latteral branches. This must neither be neglected nor delayed beyond the proper time, or all the previous labor will be lost. The season the plants are set in the row they will require no regular pruning; but should any of the plants assume a too vigorous upright growth, they should be checked by cropping their tops with a long knife. This can be done as fast as a man can walk. The Spring after the plants have been set, they should be cut off to within three or four inches of the ground. In consequence of cutting off the tops at the time of setting, each plant has produced three or four shoots. The second cutting will cause them to multiply to six or eight, nearly filling the space between the plants.

Cultivation must be continued the second year as before. About the middle of June, or when the plants appear to be making the most vigorous growth, they must be again shortened back to within three or four inches of the last cutting.—In order to give size and strength to the latteral branches, and secure a close and compact base to the hedge, these summer prunings must not be delayed. Continue to repeat the Spring and Summer prunings until the fourth or fifth year, cutting off the side and bottom branches so as to form the hedge about three feet wide at the bottom, gradually narrowing at the top, to about four or five feet in height, when it will be sufficiently formidable to turn any stock upon the farm, and so close at the bottom as to render it difficult for a rabbit to pass through it. The experience of the hedger by this time must suggest the subsequent treatment.

For trimming the hedge, a common hemp-hook with a long handle and the hedging shares will be found the most convenient implements!

Coffee.

Here are some facts worth knowing. Read and ponder them well. The generality of families make their coffee too weak, and use too much sugar, which often causes it to acid on the stomach.—Almost every house-keeper has a peculiar method of making coffee; but it never can be excellent unless it be made strong of the berry. And make it as you will, strong or weak, sweet or bitter, unless it is properly roasted, it will be a miserable unwholesome beverage. If it be underdone, its virtues will not be imparted, and in use it will load and oppress the stomach; if it be overdone, it will yield a flat, burnt and bitter taste; its virtues will be destroyed, and in use it will heat the body and act as an astringent. The closer it is confined at the time of roasting, and till used, the better will its volatile pungency, flavor and virtues be preserved. Count Rumford, a gentleman of science, taste, skill, judgment and ability to say the truth, says: "Coffee may be too bitter—but it is impossible that it ever should be too fragant. The very smell of it is reviving, and has often been found to be useful to sick persons, and to those who are afflicted with headache. In short, everything proves that the volatile, aromatic matter, whatever it may be, that gives flavor to coffee, is what is most valuable in it, and should be preserved with the greatest care, and that in estimating the strength or richness of that beverage, its fragrance should be much more attended to, than either its bitterness or astringency. This aromatic substance, which is supposed to be an oil, is extremely volatile, and escapes into air with great facility, as is observed by its filling the room with its fragrance if suffered to remain uncovered, and at the same time losing much of its flavor"—and he might have said, by long exposure, will lose all its valuable qualities.

From the Mobile Evening News.

Home Enterprise.

Nothing has ever afforded us more real pleasure than the visit we made yesterday to Meahers' Mill and Ship-yard. Our object was to inspect the first steamboat ever entirely built and furnished in the vicinity of Mobile—the *William Jones, Jr.*; but we found many other sources of interest that equally divided our attention. The Meahers should certainly be classed among the first, if not at the head, of all the enterprising utilitarians of our city. Like deep and placid rivers, they pass before us and among us, never uttering a murmur nor a word of boasting; but their acts are the continued opening of silent and unfathomable channels of usefulness.

The selected place of their operations, is, indeed, one of the most romantic spots that nature ever, in her gayest mood, endowed. A firm and high embankment of shells and clay, bordered by a broad and beautiful bayou, forty feet in depth, forms a foundation upon which rests the Mill and Ship-yard appurtenances; and at a short distance in the rear, rises a second bank, all covered over with grass, and studded with the most magnificent live-oaks, and upon which, Capt. Tim, calls his "barracts"—a long house for the eating and sleeping accomodations of the whole Shipyard troup. The Mill itself, is a feature, and cuts an enormous amount of lumber each day, besides sawing shingles, weather-boards, &c., &c., and cutting and dressing wood in all shapes and sizes, to answer their required purposes. But we are growing prolix, and will return to our point, leaving all romancing to the many pic-nic parties that will, no doubt, visit this lovely place next summer, and make it the scene of their revelries.

The *William Jones, Jr.*, is as beautifully moddelled as any steamboat we ever laid eyes upon, and in every particular most nobly adapted to the trade she is to assume. She has three fine boilers, two large engines of eight feet stroke, and twenty-one inches cylinderical diameter. She has a length of two hundred feet on deck, twenty-five feet floor, and thirty-one feet beam, with a cabin one hundred and fifty feet long. The work of her cabin is very plain and substantial, and overspread with the very essence of neatness; the upholstery and fitting of her staterooms, superb, and in every respect agreeing with the costly furniture and in fittings of the whole interior. Capt. S. P. Porter designed and superintended the building of the hull. Mr. H. McAdams, joiner, built her cabin. Mr. D. Harris did all her painting, Mr. A. W. Farrow, a young workman of true merit, in the employ of Mr. Kirk, did all the plumbing work of the Barber's Saloon and Ladies' Washroom, which will compare to any work of the kind we ever saw, and Mr. C. McCord completed her upholstery, hanging and furnishing, in the short space of four days from the time he was notified to commence. It is needless to add, that all the above gentlemen are tradesmen of Mobile, who have executed their several parts in the building and furnishing of this steamer, by regular contract with her owners.

Such home industry and enterprise must be encouraged by all who have home interests at heart, or to discourage it, would be suicidal in its effects. Therefore, let every good citizen that can, go and look at the first steambeat ever entirely built at Mobile. She is probably now at the wharf, and will go up the river to-night in place of the steamboat *Mary Clifton*, to be withdrawn.

This is not all of the enterprise of the Meahers, for they have a large and noble-looking ship on the stocks, which is in a very forward condition, and, we learn, will be launched sometime in the latter part of April next.

She is 160 feet on deck, and 34 feet breadth of beam, with 22½ feet depth of hold. It is thought she will register over 800 tons burthen, and will be calculated to carry about 3,000 bales of cotton. She is built of white oak, live oak and cypress, and it is said by her carpenters that there is not a ship in the world better timbered, and but few equal her in this respect. We made the acquaintance of her designer and superintendant, Capt. Myllay, the uncle of the Meahers, who delighted us for an hour with many topics of interest. One importand feature in his remarks was, that we had in the South, and especially around the Gulf of Mexico, the very best timber in the world for ship-building, and that England, France, and other foreign nations were continually drawing it off, at their own prices, while the South actually refused to increase her wealth and prosperity by not seizing upon and properly disposing of the many great resources that had sprung spontaneously

from her soil. Capt. M. thinks when his new ship is once launched, and covered with her crowd of canvas, that she will be leader in the enterprise of Southern ship-building, that will startle much sleeping capital into activity. It is truly interesting to hear the clinking of hammers—the bellowing of forges—the ringing of anvils—and whizzing and buzzing of saws—or to see over a hundred sturdy working men lay down their tools quietly at noon-day, and spread themselves respectfully around the long table at the "barracks" of Meahers' Mill. This sight can be seen every day, and is worth going to see, and when there, you need not fear but what the ever-generous host will invite you to his most welcome fare.

We clip the above article from a number of the Mobile Evening News. Our object in re-publishing it in the Cotton Planter, is but carrying out our intention as set fourth in the beginning of this enterprise; regarding as we do the manufacturing interest of the country, and the mechanic arts, as of paramount importance to the success and prosperity of the agricultural interest, and surely so to the permanent prosperity of cotton growing.

An Alabama built ship of one thousand tons! Yes, every word of it is true. We saw for ourself, the veritable new and first born Alabama Clipper, and beautiful, substantial specimen of she art is. She is intended to engage in the Liverpool cotton trade from Mobile, where, we hope she may long continue to vie successfully and prosperously in the trade of carrying our cotton to Europe, and returning directly back to our ports with such merchandise as our people need.

We need add nothing to what has been so well said in the above article, in rogard to the public spirit and enterprise of the mechanics. Their indomitable energy, perseverance and industry, in this new and important business in Alabama, deserve well, and, we believe, the people of Alabama will see to it, that they do not go unrewarded. This fine ship is to be launched about the first of June. We may be a head of the times, but we opine, and we are sanguine in its realization, that the period is not remote, when a ship launched in the vicinity of Mobile, though it may not be an every day occurrence! will be no uncommon announcement. How long before we shall be able to announce the manufacture, in Alabama, of Railroad Iron?

PARSNIPS.—Young parsnips require only to be scraped before boiling, old ones must be pared thin and sliced, when tender, put butter and pepper over and serve. Parsnips may be boiled or stewed with salt meat.

A bushel of plaster, per acre, sown broadcast over, will add one hundred per cent to its produce

By stabling and shedding stock through the winter, a saving of one-fourth of the food may be effected—that is, one-fourth less food will answer, than when such stock may be exposed to the inclemencies of the weather.

Contents of this Number.

Marl and Marling.....161
Premium Essay on Agricultutal Education.....164
Drainage.....169
Copper of the United States for the year 1852.....172
Moral benefits of Slavery.....172
American Agriculture, what it is and what ought to be.....175
Cotton, many varieties in Western Africa.....176
EDITORIAL NOTICES.....177
Somebody at Fault.....177
Agricultural Convention.....177
Hiving of Bees.....178
Plantation Economy, Number 7.....179
Water Gate and Water Fence.....180
Cotton Oil.....181
Useful Recipees.....181
Ficus Carica, or Common Fig Tree.....181
Proceedings of the Agricultural Conventon of the Slaveholding States.....183
Thorough, or Rich Farming.....186
Ossage Orange—Planting, Cultivating, and treatment of the Hedge.....188
Coffee.....189
Home Enterprise.....190

THE SOUTHERN CULTIVATOR, is published on the first of each month, at Augusta, Geo. D. LEE, M. D., Editor, and D. REDMOND, Assistant Editor. *Terms:* $1 a year, in advance.

J. A. & S. S. VIRGIN,

MACON, GA., AND MONTGOMERY. ALA.,

DEALERS IN

PIANOS, HARPS,

GUITARS, STRINGS,

Sheet Music,

AND A

VARIETY OF MUSICAL MERCHANDISE,

GOLD AND SILVER WATCHES,

JEWELRY, SILVER AND PLATED WARE,

AND FANCY ARTICLES.

N. B.—Watches, Clocks, and Jewelry repaired in the best manner.

April 1, 1853-6t

GEORGE G. HENRY,

COMMISSION MERCHANT,

MOBILE, ALABAMA.

Mobile, September 1st, 1852.

ALABAMA JOURNAL JOB OFFICE, PRINT.



ROBERT E. COXE & CO.,

IMPORTERS AND DEALERS IN

Foreign and Domestic Medicines,

CHOICE WINES AND LIQUORS,

Perfumery, Brushes, Paints, Oils, and Window Glass,

GARDEN AND FIELD SEEDS,

GUANO AND OTHER FERTILIZERS, &c.

MONTGOMERY.

February 1st, 1853.

MRS. SWAIN

WOULD invite the attention of the public to her

Millinery Establishment,

NO. 30 DAUPHIN STREET,

MOBILE,

Where she offers for sale a handsome assortment of all the various articles in her line of business.

☞BONNETS made to order and put up at the shortest notice, ON VERY MODERATE TERMS.

Mobile, September 1, 1852.

T. R. CRAWFORD,

NO. 15 DAUPHIN-ST.,

MOBILE, ALABAMA,

WHOLESALE AND RETAIL DEALER IN

Hats, Caps, Boots, Shoes, Bonnets,

UMBRELLAS AND ARTIFICIAL FLOWERS.

HAS one of the largest and best selected Stocks of the above-named articles, to be found in the City of Mobile, which he offers for sale at *Low Prices*, and on accommodating terms.

☞Also, a very large Stock of NEGRO SHOES, of superior quality, selected especially for the Merchants' and Planters' trade.

Mobile, September 1-6t.

Hardware and Iron Store.

SIGN OF THE GOLDEN ANVIL,

(West of the Court House)

MONTGOMERY, ALABAMA.

RICHARD COXE & CO.,

IMPORTERS AND DEALERS IN

Hardware and Cutlery, Mechanics' Tools,

BAR IRON, NAILS, STEEL;

ANVILS, Vices, Chains; *AGRICULTURAL IMPLEMENTS*—Straw Cutters, Scythes and Cradles, Reap-Hooks; *HOLLOWWARE, CASTINGS, HOUSEKEEPING ARTICLES*, &c. &c., together with every every article usually kept in a first-rate Hardware Store, all of which will be sold at lowest prices for Cash.

February 1, 1853.

C. T. CHAMBERLAIN. JNO. C. CHAMBERLAIN.

CHAMBERLAIN & CO.,

Nos. 58 and 60 Commerce Street, Mobile,

WHOLESALE AND RETAIL DEALERS IN

NORTHERN AND WESTERN PRODUCE,

BROOMS, WOODWARE, &c., &c.

☞Ship, Steamboat and Family Stores put up at LOW PRICES.

☞We call the attention of Planters and Merchants from the up-country, to our well-selected Stock, at all times ample and sufficiently varied.

Mobile, September 1-6t.

MUSIC STORE.

NO. 69 DAUPHIN STREET, MOBILE.

JOSEPH BLOCH,

HAS on hand, at his Music Store, a large and valuable assortment of *MUSIC, MUSICAL INSTRUMENTS* and *MERCHANDISE*, of every variety, and of the first quality. New and fashionable MUSIC: also, Standard Publications of old and valuable Music, Gamuts and Instrumental Books, Church Music, &c.

☞The subscriber receives regular supplies of all MUSICAL PUBLICATIONS from the North, France and Germany.

☞MUSIC bound in a superior style, with spring backs.

The subscriber respectfully informs the public, that having made arrangements with the Manufacturers, he will be constantly supplied with PIANO FORTES, of every description, which for superiority of touch, richness of tone, and elegance of workmanship, are not surpassed by any in the country.

Great attention will be given to orders for PIANO FORTE TUNING, both as regards the manner of tuning and the punctuality of executing orders.

☞The stock of MUSICAL MERCHANDISE is very extensive, embracing every article appertaining to Music, both of European and American manufacture.

Instruments repaired in the most expeditious manner.

☞Seminaries, Music Dealers, and Artists of the Profession, supplied on the most reasonable terms. Orders from the Country will be attended to, with the greatest care and despatch, by addressing

JOSEPH BLOCH,

No. 69 Dauphin Street, Mobile, Ala.

Mobile, September 1, 1852.



A Monthly Journal, devoted to improved Plantation Economy, Manufactures, and Mechanic Arts.

Vol. I. MONTGOMERY, JULY, 1853. No. 7.

PREMIUM ESSAY
ON AGRICULTURAL EDUCATION.

BY EDMUND RUFFIN, OF VIRGINIA.

[*Concluded.*]

Could I obtain general assent to the views which have been presented—to the existing great need for agricultural instruction, the benefits that would be thence derived, and the expediency of the State's incurring the charge of the foundation—it would be comparatively of little use now to submit any particular plan of instruction; and my opinions thereupon might well be dispensed with. It would be more agreeable to me to be silent in regard to details which as yet have no light or guidance from experience, or any known practical operations. But the very terms of the invitation which has induced the preparing of this Essay, demand such details. Therefore, I will proceed to submit the outlines of such a plan of organization and procedure, as appear to my mind, in advance of all experience, the best adapted to aid agricultural instructions and improvement. And as nowhere could such a foundation be more suitably placed, or be productive of more benefit, I will suppose the location to be in the State of Georgia—and the establishment, made and supported by the Commonwealth, to be called the *Agricultural Institute of Georgia.*

A tract of land, of three or four hundred acres, of suitable soil and surface, should be bought, and provided with the buildings and fixtures for a farm and subsequently put under culture, as will hereafter be proposed.

The Institute buildings, proper, should be sufficient to accommodate one hundred pupils at first; and their plan should admit of such extension as would serve for three hundred resident pupils.—The immediate direction of the whole scholastic department, and the general direction of the whole establishment, should be under the charge of a superintendent. This functionary would also be one of the instructors—of whom there should be not less than three, and the number increased as might be required subsequently.

Pupils should not be admitted at an earlier age than 16 years—nor unless previously well instructed in the elements of the English language, and in common arithmetic.

The whole course of instruction should be in furtherance of, or more or less auxiliary to, the main object of a full and complete agricultural education. The studies should embrace the higher branches of arithmetic, geometry, mensuration, land-surveying and levelling. The general principles of natural philosophy and chemistry should be taught by lectures and experiments—and more fully and particularly the branches of mechanics, hydrostatics and hydraulics, and the portions of chemistry applicable to agriculture. Indeed, agricultural chemistry should occupy an important

part of the whole course; and the instructor of that subject would be the most valuable member of the faculty. Practical instruction to some of the pupils best qualified to receive it, should also be given in operative chemistry, in analyzihg vegetable products, soils, manures, &c. Some general knowledge of mineralogy should be imparted, and still more of geology; having reference in both cases to the connexion of both these subjects with agriculture, and their probable utility in that respect. These subjects should be studied in the first and second years of the course.—They would prepare the pupils for the latter study, or the theory of agriculture, or scientific agriculture in general. Through all the the three years, which it is supposed the scholastic course of instruction would require, a portion of every pupil's time and labor should be given to farm labor, and by practice acquiring knowledge of the manner and dexterity in the performance, of every process and labor of the farm.

The objects and uses of the farm would be, first, to afford to the pupils the best means of learning practically the art of agriculture. Secondly, to afford the same benefit, to some extent, to all other persons who would visit the farm for this purpose, and who could there see mechanics in operation, and process in the course of performance, which could be seen by them in no other way.—Third, for instruction to the pupils, and still more for the information of the Agricultural community in general, experiments would be made on the farm to throw light upon, or to decide, every important controverted opinion. Both the two latter operations would be of much cost, and little, if any, immediate pecuniary profit. But the advantages thence accruing to the whole agricultural community would be of great importance and value.

It would be necessary that the farm should be cultivated regularly and continuously, and upon a proper system of rotation and general management. For this purpose, besides the limited labor of the pupils, maintained by a small number frequently changed, there should be a regular force of slaves. The immediate direction of farm labor, (under the general orders of the Superintendent,) should be in the charge of a competent and faithful overseer, well paid, and held accountable for strict and unremitting attention to his duties. After a few years, this highly important office might be always filled by a former pupil of the Institute.

The discipline of the whole establishment should be strict, even to the degree of military precision. The pupils should be required to dispense as much as possible with domestic servants. Their own slightly increased bodily exertions in this respect would make them more healthy, and more independent throughout their lives—and also would save much expense. Economy in dress, and in every thing else, should be aimed at.

The time of each pupil given to farm labor should not be more than half a day at once, and to occur once or twice each week. This would be a healthful and perhaps an agreeable recreation, and need not be an interruption to the regular course of other instruction. Though the members of the laboring party would be continually changing, the numbers and the operations of the party should be kept regular. The immediate director of the laboring party should be an advanced and well instructed pupil, who, different from the laborers, should retain his command for some days before being relieved by another of like grade. It should be made a point of honor, as well as of duty, for the pupils to disregard fatigue and any required privation—and of earnest emulation to acquire skill and ability in the performance of labor.

It should be required of the overseer to keep a regular journal, upon a systematic plan, of all the proceedings on the farm. Part of this record would be made up by the daily reports of the director of the working party of pupils. There should also be a minute record of all agricultural experiments made, and their results—and of trials of new implements and machines. These latter records would furnish instructive matter to the agricultural public.

Although no establishment has yet been made in this country by any State government for agricultural education or improvement, or any other worthy of consideration or exception, there have been plenty of recommendations of plans for this purpose. Among the various plans, or parts of plans, there have been frequently proposed "manual labor schools" and "model farms." Lest it should be supposed by any persons that I advocate any thing of either kind, I will point out the

radical differences of substance and of principle of these schemes from the two departments of the Institute which may seem to resemble them.

The design of a "manual labor school" for agricultural education is that the pupils, by their own labor on a farm, shall partly or wholly pay the expenses of their education. This scheme has been tried in the Northern States, (certainly the region best adapted for the trial,) and has failed. It would be absurd to teach science to those persons who would be likely to continue to be day laborers on farms for their daily support. And it would be a grievous waste of intellect and of time, to require of pupils capable of high attainments, to spend half of every day in agricultural labor, not to derive instruction, but for their support. In addition, the manual labor detracted much more from than it aided the mutual labor of the pupils. In the attempt to combine the benefits of both kinds of labor, the benefits of both were sacrificed.

Now, the manual labor which I propose, is not designed for profit or to avoid expense—though it will to some extent produce these benefits—but to gain the important benefit of instruction in the practical use of implements, and the execution of the various processes of culture and improvement. It is designed, and may easily be effected, for each pupil to acquire skill and dexterity in every process requiring them. But beyond this useful object such employment would be useless.

It has also been often recommended to establish "model farms," on government or corporate account. According to the plan of the visionary designers, these farms were to exhibit, as examples for general imitation, the best practices of every kind, and the best system of husbandry and general management. If such farms and such management were provided, there is no question as to their being eminently beneficial as models and examples. But the obtaining of sufficient and continuous net profit on the investment is the most essential part of good farming; and every man of practice and observation knows that no farm owned by and cultivated for government, or for any joint-stock association, could possibly yield any pecuniary profit. The unfounded and empty pretension to good general management—the vain assumption of superiority and expectations of profit—with the certain realization of disappointment and loss—would bring discredit upon even the valuable features of the scheme, and throw reproach, ridicule and contempt upon the whole scheme, and all its connexions.

In the farm and farming of the Agricultural Institute, I propose to have all that is valuable, and to discard what is impossible and would be injurious to attempt, in the scheme of a "model farm." Instead of promising profit from the culture, all that is to be hoped for, under the best possible management, would be a moderate annual loss. For even if, despite of the defects of all joint stock and government operations and investments, the farming by the regular laboring force could be conducted with profit, still much more than that profit would be absorbed in the operations of the farm as a school for practical labor and instruction for the pupils, and of experiments in culture, and trial of new methods and new implements and machines, for the benefit of the whole agricultural community.

So far the plan proposed provides for instruction in the science and in the art of agriculture. But there would still be a deficiency, which could not be supplied in this or any other such establishment. This would be instruction, by example, of a good system of farming and general management, conducted with judgment, economy and profit. Such examples, and such instruction, can be found on the farms, and in the management of a sufficient number of farmers in Georgia and other Southern States, even though these cases may be but as one to the hundred of cultivators whose example should be avoided. These should be judiciously selected and designated. A number of these good and profitable cultivators, residing in various agricultural regions of different culture and products, and whose plantations, or farms, truly offered models and examples of good management, (either in general or particular processes.) Such selection and designation by the Agricultural Institute, would be a high and well deserved compliment to these individuals,—and which alone would operate indirectly for the improvement of agriculture. Their public spirit, and the request of the authorities of the Institute, would probably induce most of these farmers to receive, as inmates in their families and assistants

on their farms, any pupils of the Institute who desired to obtain such additional instruction in practical and general management. These pupils, according to their means, would pay for their instruction and maintenance, either in money or in their assistance to the farmer as subordinate agents. In this manner these distinguished farmers would serve well the Institute as adjunct professors of practical agriculture and farm economy—would afford much benefit to the pupils under their charge—and would be fully compensated. On the other hand, each pupil could select for his practical guide and instructor, a farmer in a region similar to such as the pupil designed subsequently to labor in, and so obtain instruction in the particular department of agriculture best suited to his wants and his future residence. A young man, previously prepared at the Institute, who availed himself of these advantages, either of fixed residence and service, or of changing from one of these example farms to another, would acquire more of useful and practical knowledge in a year, than in his whole life of solitary and unaided effort on his own land.

Let us now suppose the Agricultural Institute, as proposed, to be in fair operation, and infer what would be the action and results.

The Institute would offer not only the best course of education for farmers, but for all persons of varied and active life, and for pursuits in any fixed business. There would be unusual safeguards against idle, expensive and vicious habits. The physical training would be conducive to health, and the establishment of a good constitution. Hence, I presume that there would be many parents who would seek for their sons such a course of useful education, even though not designing them to be farmers. And as there would be no other such institution, (for the present,) many pupils would come from beyond the borders of Georgia. Therefore, I infer that in the first year of full operation, there would not be less than one hundred paying pupils, and soon the number would so much more increase (probably to three hundred) as to greatly lower the cost of the establishment to the commonwealth.

Fifty other pupils, selected for their merit, should be educated and supported at the charge of the commonwealth. No distinction in any respect should be permitted to be made between them and the paying pupils. It is well known, by the experience of other State institutions, having this feature, that it is perfectly practicable to avoid all such improper distinction, even among the pupils themselves. Indeed the very ground (of merit) upon which the State pupils would be selected, would give them a claim to higher than ordinary respect; and no other claim would be more readily admitted and respected by the generous and ardent feelings of youths in general.

The course of instruction would serve to impart to every industrious pupil not only a large amount of valuable agricultural knowledge, but even more of all kinds than any individual in the United States now possesses. After the Institute had been in successful operation, some seventy-five to a hundred of such well trained and well informed young farmers would every year begin to labor, in Georgia or in the neighboring States. This supply would furnish more light among young cultivators, in a year, than otherwise would be received by the same class in a century. Each of these instructed farmers, in his separate locality, would serve to diffuse light around among his neighbors. For this end, of public benefit, it is not necessary to require that all the pupils shall put their knowledge to profitable use. No course of education can guard all men against the dangers of bad habits or bad management. But even when an instructed pupil of the Institute should, as a cultivator, thus go to ruin, his knowledge and his previous labors would still not be useless as instruction for other persons.

Thus, the example and influence of the farmers trained at the Institute, and whose numbers would be rapidly increasing every year, would operate for the instruction and profit of more than twenty times their number—and before a long time this influence would extend throughout the whole State. The change of condition of every planter in the State from annually losing a few hundred dollars, by neglect or want of knowledge, and the avoiding that loss—and still more, the reaping of as much of new profits, would amount to many millions of new wealth to the commonwealth.

Further: There is no State in this confederacy which is now losing more than Georgia, by the waste of the fertility of her soil, and the neglect

of her wonderfully great agricultural resources; and there is no other country that could be more speedily and profitably improved by a change from exhausting and destructive tillage, to a judicious, fertilizing, and at the same time, the most profitable system of culture. For every necessary outlay, or cost, to individual proprietors, or to the commonwealth, necessary to make this great and general change, the returning benefit, in productive wealth thus created, would be a hundred-fold greater.

Marl and Marling.

(*Concluded.*)

With regard to what is a sufficient application, there is a great diversity of opinion, and consequently of practice. Viewing it chiefly as a direct manure, in many parts of Europe, marl is applied at the rate of 8 to 10 bushels per acre annually—in others, at 10 to 12 bushels every third year; and again, in other parts, at 30 to 50 bushels every twelve years. But as its indirect effects are as important, and far more numerous than its direct, and it is therefore an invaluable elementary constituent of soils, the true rule for its application undoubtedly is to furnish the soil at once, if possible, with as much as its constitution will bear, and to repeat the dose as frequently as the improvement of that constitution will permit, since the more lime, every thing else being in due proportion, the larger the crops. Acting on this principle, many farmers in Europe put on 3 or 400 bushels of lime at once, and sometimes 1000. Such liming is probably excessive there, and in our climate would be utterly destructive. Marl, however, containing from 50 to 70 per cent. of lime, may be safely used in four times the quantity we can use quick lime. The usual dose of marl of that quality in Virginia, varies from 2 to 300 bushels. But more can be applied even in Virginia than here. The hotter the climate, the more caution is necessary in the first dose at least. Though this is greatly dependent on the condition of the land to be marled. In the hot and dry climate of Egypt, the fruitful Delta of the Nile contains 25 per cent. of carb. of lime, which is equivalent in one foot depth of soil, to some 10,000 bushels per acre of marl containing 50 per cent.; but that soil is much deeper, and its vegetable mould inexhaustible. Depth of soil, and the amount of vegetable matter in it, must chiefly regulate the quantity of marl. M. Puvis has given an interesting table in reference to this.—He thinks that we may give to a soil three inches deep, 40 bushels of marl, containing 60 per ct., of carb. of lime, or 50 bushels containing 50 per ct.; and to a soil six inches deep, 80 bushels at 60 per ct., or 100 at 50 per ct. He does not refer to the vegetable matter, or other circumstances of the soil. I presume that the depths of the soils you cultivate range between the extremes stated, or at least that you seldom plow, and would not, therefore, mix the marl deeper than six inches. I think the amounts he specifies are very safe. As some of my lands are similar to yours, and our climates the same, I will give you my experience on this point. I began to marl by putting 200 bushels per acre, that averaged about 60 per ct. carb. of lime. On old mulatto land, with a soil about six inches deep, and containing about 4 per ct. of vegetable matter, I have not yet, after four years, perceived any injury from it. On lighter land, containing less vegetable matter, and a soil four to five inches deep, I discovered marl burns the second year. Previously to this discovery, however, I had taken the alarm, and reduced the quantity to 150 bushels, on land similar to the last mentioned. On all the thin spots I perceived the "marl burn" from this amount. I then further reduced the marl to 100 bushels per acre, from which I have as yet perceived no injury. Being now about to finish the marling of all my open land, it is my intention to go over it again, and to add 50 bushels per acre at a time, until I have given to all 200 bushels. I shall by no means, however, venture to do this until, by resting and manuring, I have also furnished to it additional vegetable matter.

I think I may safely recommend you to apply 100 bushels per acre, of the richest marl you have, to any land that now gives you remunerating crops, and 200 bushels, or more, to your best lands. If they are low and sour they will bear still more. I am now putting 250 to 300 bushels on some swamps I have drained, which have several feet of vegetable mould. I should not be afraid to put 1000 bushels per acre on such land

—though here I think quick lime would be the best application, as it would hasten decomposition.

It is always most convenient to apply marl to resting lands, and it is also a great advantage to secure, by this means, a new coat of decaying vegetation to start with. So new grounds should be marled the first year; if marled before clearing it would be better still. Very old and exhausted land should be rested two years previously to marling; and in all cases, thin knolls should, if possible, be manured when marled. But a little experience will furnish you the best guides in this regard—you will soon discover all the dangers, and learn to apply all the remedies.

Experience will also teach you in very short time, the best and most convenient methods of digging, carting, and spreading marl. There are some difficulties connected with digging from marl pits, which, with the means of overcoming them, are stated in Mr. Ruffin's work. They arise chiefly from water, which must be drained off, or pumped out, according to circumstances. I have no experience on this point. My marl is cut from the face of the cliff at Shell Bluff. It is estimated that if a strata of marl is 12 feet thick, 12 feet of covering may be removed to procure it, without hazarding too much. But should you find marl, you need not apprehend much danger of working through it. The great formation of which it is a part, is of unknown depth. Over 100 feet of it is exposed at Shell Bluff; it has been penetrated more than 300 feet in Charleston.

In hauling out marl, the most economical method is to use carts with two mules or horses. In a cart properly made, they will haul 18 bushels at a load as easily as one mule will haul 6. The carts should be made with three shafts, so as to divide the weight of the load equally between the mules, and the tread of the wheels should be 4 inches—axle-trees of iron. In putting on 100 bushels to the acre, the land should be divided by furrows into squares 28 yards each way. This will give 6 to the acre. A load of 18 bushels to each square will rather exceed 100 bushels per acre, but some will always be lost. The full effect of marl cannot be felt until it is thoroughly mixed with the soil. Hence the first year, little is to be expected from it, and it seldom reaches its maximum until the fourth crop—not always then.—Its effects may be hastened, and what is also important, rendered equal, by spreading it with regularity over the land. It is best, therefore, to sow it broad-cast with the hand. Each laborer should take his square and spread the pile, using a tray or board to assist him. A hand will spread 9 piles, of 18 bushels each, in a day.

The distance to which marl may be carted depends altogether upon circumstances—one of which is the quality of the marl—another, that of the land—others, the facilities for digging, state of the roads, &c. Along the coast of Scotland, it is transported by sea from 80 to 100 miles. I have been very recently informed, that at a single marl bank on James river, in Virginia, 10 rigged lighters are now engaged in delivering marl to a distance of from 8 to 20 miles up and down the river, receiving 3 cents per bushel for it, though it is much inferior to ours in quality. The marl I use averages about 60 per cent. of carbonate of lime. I cut the whole of it down at Shell Bluff, and boat it 12 miles up the Savannah river, re-land and cart it. I have marled about 700 acres within a mile of my landing here—but I have hauled some marl 4 miles, and have spread it on about 500 acres, the nearest part of which is over three miles from the river. This is of course very expensive; but I think it profitable, notwithstanding. If I could lay down any rule to regulate the cost of marling, it would be this; that where land is deficient in lime, it it would be a safe operation to expend an amount equal to the present value of it, if so much should be necessary to marl it sufficiently. This rule I suggest upon the principle that it would be profitable to pay twice for land, if you could thereby double its production without materially increasing the cost of cultivation.

You will naturally inquire, whether any one might reasonably calculate on doubling the production of his land by marling. I have seen but few statements of the actual results of marling in Europe. It is said in general terms to produce a great increase, though occasionally it is mentioned that the crops were doubled. So perfectly established is the use of lime and marl there, that every one who can procure them, uses them as a

matter of course. It is not considered an experiment, and tables of results are not therefore given at least, I have seen none. A few years ago, Mr. Ruffin addressed interrogatories touching the effect of marl as exhibited in the crops, to a number of the most respectable farmers of Virginia, who had used it, and received answers from twenty-two, many of whom had marled extensively and for a number of years past. These answers were published in the Farmer's Register and in Mr. Ruffin's Report of his Agricultural Survey of South Carolina. Their marl was of various qualities, applied in various amounts per acre, and on different kinds of land, which had been subjected generally to very severe cropping before. No one of these estimated the increase of his crops from marling at less than double, and some of them rated it as high as 400 per cent. I have no doubt, that under favorable circumstances and good management, the last mentioned increase, enormous as it is, may be often realized. The prospect, however, of doubling the crop with reasonable certainty, is promise enough, one would think, to set every one to marling who can do it within the cost I have mentioned. I have not myself, yet doubled my own crop by the use of marl, nor might the practical results of it, which I ought to state, be so striking to a careless observer as he might expect, after all I have said on the subject. They satisfy me, however; and I feel perfectly certain that in a short time, the crops on all the land I plant, will be at least doubled, from the effects of marl alone, and much more than doubled, in consequence of other additional applications I am making. I commenced marling in November, 1841. I marled only 175 acres for the crop of 1842, the results of which I reported to our State Agricultural Society, as I did those of 1843, on the same land. They were published, and some of you may have seen them—I will therefore only repeat the tabular statement of those years, and add to it that of the past year. In 1844, these lands rested. The experiment marked No. 1, was made on mulatto land lying on the river bluff, which in appearance, and perhaps in most other respects, is much the same as the best upland cotton soils in your county which have been as long in cultivation. Experiment No. 2, was on light, sandy soil,—the sand is very fine, but altogether, the soil is as inferior as any probably that you plant in cotton. I could scarcely have selected lands less calculated to give the marl a fair chance—both having been cleared more than a century ago—badly scourged, and of course greatly exhaustted of vegetable matter.

Experiment No. 1. Mulatto Land.

1842.	Cotton Seed.	Less than unmarled acre.	More than unmarled acre.	Per Ct.
Acre not marled,	1111 lbs.			
Do marled 100 bush.	846 "	265 lbs.		30.
Do. do 200 "	1003 "	108 "		10.7
Do. do. 300 "	1318 "		207 lbs.	17.7
1843.				
Acre not marled.	493 lbs.			
Do. marled 100 bush.,	654 "		161 lbs.	32.6
Do. do. 200 "	750 "		256 "	53.9
Do do. 300 "	841 "		348 "	70.
1844.				
RESTED.				
1845.				
Acre not marled,	324 lbs.			
Do. marled 100 bush,	481 "		157 lbs.	48.6
Do. do. 200 "	584 "		260 "	80.2
Do. do. 300 "	642 "		318 "	98.

Experiment No, 2. Sandy Land.

1842,	Corn.	Less than unmarled acre.	More than unmarled acre.	Per Ct.
Acre not marled,	17 bush.			
Do. marled 100 bush.	21 "		4 bush.	23.5
Do. do. 200 "	21 "		4 "	23.5
Do. do. 300 "	18½ "		1½ "	8.8
1843.	*Seed Cotton.*			
Acre not marled,	361 lbs.			
Do. marled 100 bush.	451 "		90 lbs.	24.9
Do. do. 200 "	384 "		23 "	6.3
Do. do. 300 "	173 "	188	"	108.6
1844.				
RESTED.				
1845.				
Acre not marled,	280 lbs.			
Do. marled 100 bush.,	317 "		88 lbs.	27.7
Do. do. 200 "	301 "		71 "	30.3
Do. do. 300 "	159 "	71	"	44.6

The first thing that will strike you on looking at this table, will be, that the crops have regularly and excessively diminished, from the time the land was marled. It might be concluded that I had ruined my land by marling. Such I will candidly own would have been my own conclusion, if fortunately I had not kept these unmarled acres to test the success of my operations. Disastrous as have been the three last crop seasons in this section of country, I would not have believed it possible that there could have been such a falling off from seasons alone, and I should have abandoned marl, in spite of the experience of the rest of the world, as injurious, at least to my soil. But great as has been the decrease of production on all the acres, it has been far greatest on the unmarled ones. That of the others, has comparatively steadily increased, except the 200 and 300

bushel acres in No. 2, both too heavily marled but both recovering again under the rest of 1844. In No. 1, the acre with 100 bushels has increased from 30 per cent. below, to 48.4 per cent. above the unmarled one—making an actual comparative increase of 78.4 per cent. The acre with 200 bushels, has in the same way increased 90.9 per cent. Both these acres are decidedly inferior to the other two in No. 1, and have, I do not doubt, produced this year double what they would have done without marl. The other two acres in No. 1, are a pretty fair test of the influence of marl, being as nearly equal in quality as could have been selected. The sandy land, in time and with proper management, will, I am certain, exhibit results fully as favorable as the mulatto land. It was too far exhausted when marled. I did not reserve test acres on any other fields, but I feel sure that they have derived equal advantage from the marl, in proof of which I could state many facts to one present on the spot, which it would be tedious to mention and explain fully in this letter. I will only state one: the unmarled acre in No. 1, is one of the best acres I plant. In 1842, it yielded 1111 lbs. The average of my whole crop that year, was 666 lbs. per acre. The last year, the same acre, *after the rest*, produced 324 lbs. The average of my crop was 391 lbs. per acre. Thus, the yield of the unmarled acre, was in one instance 66.8 per cent. above, and in the other, 20.6 per cent. below the general average—making a difference of 87.4 per cent. in favor of the marled lands. Let me add that in 1842 the unmarled acre in No. 2 produced 8.8 per cent. less than the average of the crop. In 1843 it fell to 37.6 per cent., and in 1845 to 70 per cent. below the general average. If these facts may be assumed as data, on which to base a calculation, had the last year been favorable in all respects as 1842, the average of my cotton crop must have been over 1200 lbs. of seed cotton per acre, and of my corn crop over 28 bushels per acre. This however is only a *paper* calculation, and 1842 was a fine crop year. Time will reveal the truth.

I cannot give you a better evidence of the firmness of my faith in the virtue of marl, than to state, that notwithstanding the discouragements of the last three extraordinary seasons, I have, at great expense, brought up from Shell Bluff, within four years, over 300,000 bushels, carted it out, and spread it over about 2300 acres of land; and am at this moment as actively engaged at it as ever. Nor do I look forward to a period when I expect to cease using it to a considerable extent every year, either on fresh lands, or in increasing the dose on those already marled. It would be leading you into error, however, to leave you to suppose that I rely solely on the marl to improve my lands. Rest, in connection with it, is indispensable, and manure becomes far more beneficial. I have, accordingly, by opening more land, and reducing my planting, enabled myself to rest, annually, one third of my fields. And I have already hauled out and mixed together, for the coming crop, 96,000 bushels of muck, and 48,000 bushels of manure from stables and stable yards, hog and ox pens, &c., having yet about 20,000 bushels more to carry out before planting. I shall not only endeavor to increase this amount of manure every year hereafter, but also, by clearing and reducing the land in cultivation, to rest, as nearly as may be requisite, each field, every other year. Indeed, the management of land, after it is marled, is of the utmost consequence to the efficiency and profit of marl. Though lime is itself a portion of the food of plants, and therefore a manure, this is perhaps the very least of its virtues. Its indirect operations are far more important. It is the grand agent that prepares for the crop nearly all the food which the earth furnishes. It is the purveyor general—no—the Farmer must fill that office; it is the "*chef de cuisine*" that selects the ingredients, mixes, and seasons almost every dish to suit the delicate appetite of the growing plant. It is from the materials placed in the soil by nature, or the industrious husbandman, that this skilled artist draws the rich repasts it furnishes; and it could no more furnish them without these materials, than your cook could make your soup without joints and spices. The larder of the marl must then be amply supplied. The means of doing it are rest and manure. The great gain to the farmer is, that having once engaged in his service this powerful, untiring, and almost universal agent, he may safely exert himself to the utmost of his ability to supply it with every thing necessary to carry on

its important operations. Seizing on whatever is valuable, it preserves it from waste—combining with the utmost generosity the wisest economy, it not only yields to the plant all it requires, but stimulates it to ask more, while it is inaccessible to demands from all other quarters.

There is no fancy in this—theory and experiment unite to prove it true. And I trust that no great length of time will elapse before marl shall have written its own eulogy in indellible characters over all the broad fields of your county.

Permit me to conclude this letter, for the great length of which I owe you an apology, by returning my acknowledgments for the honor you have done me in electing me an honorary member of your Society, and by wishing each member of it the utmost success in his agricultural pursuits.

I am, very respectfully,
Your ob't serv't,
J. H. HAMMOND.

HAMILTON RAIFORD, Esq.,
Corresponding Secretary of the
Agricultural Society of Jefferson co., Ga.

PREMIUM ESSAY

ON THE TREATMENT AND CULTIVATION OF COTTON.

READ BEFORE THE SOUTHERN CENTRAL AGRICULTURAL ASSOCIATION,

BY JAMES M. CHAMBERS.

The cotton plant is hard to be suited, in soil and in climate, and it rarely happens that such a combination of both is obtained, as to perfect the plant and mature the crop. The consequence is, that few spots are found where these results are obtained with any degree of uniform success; but these do exist, to just such an extent as to demonstrate most conclusively that soils in proper localities are to be found, exactly suited to the successful culture of this delicate plant. With a knowledge of this fact, it becomes a matter of prime importance to understand what these peculiarities of soil are, and where deficiences exist to search them out—and by artificial means, as far as it may be practicable, to correct or cure these defects of the soil in its natural state. We may not hope to remedy all the imperfections, yet it is the province of the cultivator to approximate as nearly as possibl , and by preparation and culture to endeavor to meet these peculiar wants of the plant. The first inquiry which presents itself is, to know what are the peculiarities of those soils which suit the growth and maturity of cotton.—Experience is perhaps the safest and most reliable test, in the settlement of this question, and it is now pretty universally conceded, that our best cotton lands are those which are of deep and soft mold, a sort of medium between the sandy and spongy, and those soils which are hard and close—those which are penetrated by the warming rays of the sun, imbibing readily the stimulating gases of the atmosphere, and which allow the excess of rain water to settle so deep into the earth as to lie at a harmless distance below the roots of the young plant. These are the properties of soil needful to the vigorous growth and early maturity of the cotton plant; and the knowledge of this fact is of great, and perhaps I might add, indispensable importance, to its successful cultivation. For though we may not find, and indeed it is very improbable that we should often find, all these essentials in the selection of a farm, yet by the aid of the plow, the hoe, and the spade, and the incorporation of foreign substances, we may remedy many defects, and supply many of the peculiar demands of this plant. These are all preliminaries to be arranged and understood, and from this point we set out to discuss the question as to the best methods of cultivating the cotton crop. It may already have been inferred, but I am not willing to leave to inference, but make the assertion that in my opinion the best and most important part of the work, in cotton making, consists in a judicious and proper preparation of the soil for planting. It is difficult to say in all cases, and in the varied condition in which lands are found, and the diversity of soils, what the process of preparation should be; but we may lay down general principles for our government, and results to be obtained, and leave the plant to the selection of the best means at command for their accomplishment. All the lands for cotton ought, before the crop is planted, to be broken deep, close and soft, and this to be done long enough before planting to allow the rains gently to settle them. It is the most common, and perhaps the best plan, to prepare all lands intended for cot-

ton, in beds made by the turning plow; and in flat and wet lands, sometimes an additional elevation ought to be given by drawing up the beds with the hoe. I think in this work we have often followed too much the example of our neighbor. and have looked too little to reason, in the indiscriminate bedding and high elevation of all lands. I am the advocate of deep, soft beds, made by very thorough and close plowing, but cannot consent to the necessity or benefit of elevating much lands which are warm and dry, and which are not subject to inundations from excessive rains. For the convenience of culture, I would have the young cotton stand on a slight elevation, but when the condition of the land did not require it, I would not give it more.

The *distance* to be given is the next inquiry to be considered. This is a very important object, and one upon which we are very dependent for success, and yet it must be varied very much by circumstances, some of which are beyond our knowledge or control. The general principle may be stated, and then our best judgment must guide us in its application.

When the crop is at maturity, the branches of the stalks ought slightly to interlock every way. We cannot, therefore, do better in planting, than make an estimate of the probable average size to which the weed will grow, dependent of course upon the vicissitudes of the seasons. It would therefore be vain to attempt to be more specific in directions which must be varied always to suit the varied character of the soil. This whole question, then, is to be settled upon the principle already stated. The planting should be in drills, chiefly because of the difficulty of obtaining good stands in hills, and I would add for the information of those who may be without experience, that in the common medium lands of the country, those rows ought ordinarily to be about four feet apart, and the stalks in the drill should be thinned, so as to stand from fifteen to twenty inches from each other. The width of the rows and the distance in the drill, may be increased upon better lands, and in some cases of very thin lands it may fall a little below the distances designated.—I do not regard it a matter of indispensable importance, but should decidedly prefer that the rows should run in such direction as to give the plant the largest benefit of the sun from early morn to its setting. The cotton is decidedly a sun plant.

The Mode of Planting. Here we have many plans, all setting up claims to some peculiar merit. With the preparation which I have indicated, it would hardly be necessary to stop to discuss the relative merits of these modes, or seek to do more for the accomplishment of our purpose, than to select some one which we know to answer well. I therefore advise the use of some small and very narrow plow, for the opening furrow. This should be run in the centre of the bed, opening a straight furrow of uniform size and depth. In this the seed should be strowed by some careful hand, scattering them uniformly along the furrow, just thick enough to secure a good stand the whole length of the row. These I would cover with a board made of some hard wood, an inch or an inch and a half thick, about eight inches broad, and thirty inches long, beveled on the lower edge so as to make it sharp, slightly notched in the middle so as to straddle the row, with a hole bored in the centre one inch from the upper edge, and screwed on the foot of a common shovel or scooter plow stock. This wooden scraper and coverer, when drawn over the row, covers the seed nicely, leaving a slight elevation to prevent the settling of water, and dresses the whole surface of the bed neatly for the space of fifteen inches on each side of the drill. Thus all clods or obstructions are removed, and a clean space is left wide enough for the passage of the plow at the first working between the young cotton and the rough land.—This is an advantage of much importance with a crop so tender and small as cotton at this stage.

I have now conducted the operator, by a regular series, to the closing operation of planting the crop. And here I may be permitted to remark, that fine returns are sometimes obtained with much less preparation. These are results from the accidents of season, and not the due reward of well directed culture; a prize drawn from the lottery, against which there are many blanks; a demonstration of the futility and uncertainty of all the best laid schemes of man. I pause before taking the next step. In this age of improvement, with scrapers, and cultivators, and all the endless variety of labor-saving plows, and amid

advocates for hard culture, and soft culture, and high-ways and by-ways for making the crop, "who shall resolve the doubt when all pretend to know?" and who shall decide, with such differences among doctors, who is right? and who can pretend to say what number of acres to a hand will constitute a crop with such varied modes of culture? I shall proceed upon the supposition that a plentiful supply of provisions are to be made on the farm, and then set down as a good cotton crop ten acres to the hand; under favorable circumstances a little more may be cultivated, and on some lands less. Upon this basis I proceed. As soon as the young cotton is up to a good stand, and the third and fourth leaves begin to appear, the operation may commence. In lands which are smooth and soft, I incline to the opinion that the hoes should precede the plows, chopping into bunches, passing very rapidly on, and let a careful plowman follow on each side of the drill, throwing a little light dirt into the spaces made by the hoe, and a little also about the roots of the cotton, *covering and leaving covered* all small grass which may have sprung up. This is indeed the merit claimed for the operation, that after the hoes have passed, the plows come on and effectually cover and destroy the coat of young grass then up. This is known to practical planters to be the crop of grass which escapes the hoe and does mischief to the cotton. But when the land is so rough as to endanger the covering of the cotton with the plow, the operation must be reversed, and the hoes follow the plows. All that is now proposed to be done is a very rapid superficial working, reducing the crop to bunches, soon to pass over and return again for a more careful operation. This should be done as soon as possible, as will be indicated by the necessities of the case. The grass and the weeds must be kept down, and the stand of cotton reduced. At this first working, unless in lands already very soft, I should advise the siding to be close, and to be done with some plow which would break and loosen the earth deep about the roots of the young plant. Others may theorize as they choose, but with a plant sending out a tap root upon which it so much relies, and striking so deep into the earth as that of cotton, I shall insist upon its accommodation, by providing a soft, deep, mellow bed, into which these roots may easily penetrate. In the second working the plows should in all cases go before the hoes, and in all lands at all tenacious or hard, let the work be deep and close again, and the middle of the rows also be well broken up at this time. Now the hoes have an important and delicate duty to perform. The cotton is to be reduced nearly to a stand, though it is now rather early to be fully reduced; perhaps best to leave two stalks where one is intended to grow. The young stalk is very tender and easily injured by bruises and skins from rough and careless work, and it is much better to aid a little sometimes with the hand in thinning, than to spoil a good stand by bruises from the hoe.—The cut-worm and the louse are charged with many sins which ought to be put down to the account of careless working at this critical stage of this crop. The distance to be given I have before stated, and in the first operation of bunching this thing ought to be looked to and the spaces regulated accordingly. At this second passing over the hoes must return a little soft dirt to the foot of the stalk, leaving it clean and supported. If this work is well done, the weed will grow on, without any necessity for further attention for some twenty days or three weeks, when the plows should be used next the cotton, which will tumble the soft earth about the root, covering the small young grass which may have sprung up since the last working, but the plowing should be less close and shallower than at the former working. The hoes have much to do in the culture of this crop, and must be prepared to devote pretty much all their time to it, constantly passing over and perfecting that which cannot be done with the plows, by thinning out surplus stalks, cleaning away remaining bunches of grass, stirring about the roots of the plant, and if need be adding a little earth to them. It is difficult in a treatise of this sort to say how often and in what manner this crop shall always be worked, when the character of the seasons and the difference in the land must have necessarily so much to do in settling this question. The general rule must be to keep the earth loose and well stirred; the early workings to be deep and close; and as the crop comes on and the fruit begins to appear, let these workings be less close and shallower, keeping the soil soft and clean. It is of great importance to work this crop late, and

it should not cease until the branches lock or the cotton begins to open. I do not consider that it is necessary to pile the earth in large quantities about the roots of the cotton, but think the tendency of all the workings should be to increase the quantity.

The selection of seed is an interest not to be disregarded. We have been humbugged a great deal by dealers and speculators in this article, yet we would greatly err to conclude that no improvement could be made. We should, however, save ourselves from this sort of imposition, and improve our own seed, by going into the field and picking each year, from some of the best formed and best bearing stalks, and thus keep up the improvement. Great benefits may often be derived by changes of seed in the same neighborhood, from differences of soil, and occasional changes from a distant and different climate may be made to great advantage.

The picking of cotton should commence just as soon as the hands can be at all profitably employed—say as soon as forty or fifty pounds to the hand can be gathered. It is of great importance, not only to the success of the work, but to the complexion and character of the staple, to keep well up with this work, so that as far as possible it may be saved without exposure to rain. The embarrassments to picking when once behind, and a storm or heavy rain shall intervene, mingling it with the leaf and tangling in the burr, are just as great as to get behind in the cultivation of the crop, when much additional labor will be required to accomplish the same object.

In the early pickings, when the seed are green, some sunning is indispensably necessary; but after more maturity and dryness, very little will be required. This must be determined very much by circumstances; but dew or rain water should always be removed, by drying upon the scaffold before the cotton is bulked in the house. With proper care and attention, great improvement may be given to the complexion of the staple by a little heating in the bulk, extracting the oil from the seed, and imparting a slight cream to the color. The process, however, must be conducted with great caution and care, lest the heating proceed too far and injury be done. It is easily checked by stirring and exposure to the air. It is an advantage to all cotton to lie in the bulk before ginning, and we doubtless often lose much of this benefit for want of sufficient house room. Indeed, I think it a very common error in our plantation arrangements not to build houses for this special object. The cotton, when ginned, ought to be so dry that the seed will crack when pressed between the teeth. It is often ginned wetter, but just as often the cotton samples blue. A gin should be used which will neither cut nor nap the cotton, but send out the fibre straight and smooth, so that when the samples are drawn, they will have the appearance of having been carded. This is greatly promoted by the largely increased number of brushes now added by the best manufacturers.

The packing should be in square bales; and, without reference to freight, or any of these mere incidental influences, I think the weight of the bale should be fixed at about four hundred, or four hundred and twenty-five pounds; to be in two breadths of wide bagging, pressed until the side seams were well closed, or a little lapped, and then secured with six good ropes, the heads neatly sewed in, so that when complete and turned out of the press, no cotton should be seen exposed. These packages should be nearly square, for the greater beauty of the bales, but still more for the greater convenience with which they may be handled and shipped, saving the necessity for tearing the bags and giving a better guarantee that they will reach a distant market in good order.

The crop is now made and ready for market, and as I have gone through with the labor of making, I hope I may be pardoned for manifesting a little interest as to its disposal, and therefore venture to offer a little advice on that subject. Create no liens on this crop, or necessity for selling. Never spend the money which it is to produce until it is sold. You are then free to choose your own market and time of selling; and as cotton is a controlling article, it will generally regulate the value of all property to be purchased, *except the redemption of an outstanding promise.*

I might have said something about the topping of cotton, but all I could have done would have been to put it down as a contingent operation, and doubtful in its effects upon the crop. I might

also have descanted largely in the enumeration and description of insects and diseases peculiar to cotton, suggested some remedy, and swelled my essay by a flourish in the dark upon topics about which little is known; but I have felt that it would be most in accordance with my plan, and certainly most with my feelings, to candidly confess my inability, and include these all under the head of Providential contingencies to which the crop is liable, and against which we may war and contend, but which will after all prove an overmatch for the energy, the skill, or wisdom of man.

From DeBow's Review.

Cotton Worm.

ITS HISTORY, CHARACTER, VISITATIONS, ETC.

The following are some remarks on the nature of the cotton fly of 1846, being a sequel to a dissertation on the usefulness of a knowledge of the natural history of insects, written last winter. I send you that portion only which treats of the cotton fly, as falling more especially within the province of your periodical. This manuscript would not have sought a place upon your pages, had not my attention been drawn to it by the ill-founded apprehensions of many planters concerning the *present* existence of the cotton worm, an event utterly impossible, for if it makes its appearance at all this season, it most certainly will not do so until the cotton plant has attained its greatest maturity. I see, also, in your Review, a communication claiming to show the means by which the army worm may be effectually eradicated, in which is displayed the greatest ignorance as to the general laws that govern the insect world. The writer states that the chrysalis of the cotton fly may be plowed up, and thus destroyed, &c. Now, these chrysales never go in the ground at all, but are invariably attached to something above the surface. This is a fact that could not have escaped the attentive observer. I ask how a chrysalis, invariably formed above ground, and incapable of locomotion, is to work its way beneath the soil? As to the insect, on any condition, secreting itself in the earth, beneath the bark of trees, under fallen timber, &c., it is altogether a mistake, if not an absurdity, and easier asserted than proved. In treating of the cotton fly, in the following pages, my aim has been to found my assertions upon general principles, and though the practised entomologist may find some inaccuracies in the detail, yet I insist upon the principles as universal and incontrovertible.

Let us now pass to the consideration of the cotton fly, premising, however, before entering into an examination of this destructive little moth, that my remarks are intended less to enlighten others, than to elicit information from some one who is better able to inform the public mind on this interesting subject. As for myself, I must confess that my limited observations do not justify me in coming to any positive conclusions, nor have they by any means satisfied my curiosity, but my information, such as it is, I give in the following pages, with the hope that, however imperfect it may prove in the main, yet, that some mite of information may be gleaned from it. It is impossible to think for a moment that this species of moth has escaped the observation of entomologists, for the plant upon which it feeds, to the absolute exclusion of all others, (being the great staple production of many countries,) must have brought it into notice at various times and at various places. From its univorous nature, (to coin a word) it must have been coeval with and inseparable from the existence of the cotton plant. My principal motive for broaching this subject, is on account of the frequent remarks made, and fears entertained, that the army worm would become an annual plague. But since I have investigated their nature, I have come to the conclusion that these fears are groundless, and that the cotton fly can never become naturalized in our climate.

The first eruption, as I am informed by an old planter, that this insect made on the cotton fields of Louisiana, was about the year 1820, when its progress was marked with the same utter destruction of the cotton crop, as in the subsequent years of their appearance. It then disappeared until '40, a period of twenty years. There is something singular and unaccountable in the periods of this insect, something vastly different from the periodicities of others which we find with us, for they appear to be governed by some fixed laws; the most of them are annual, very few biennial. Now, the grasshopper, house-fly, and musquito may be looked for at the return of summer, with as much confidence and certainty as we look for the revolutions of the seasons. The cicada septemdecem never fails to make his appearance once in seventeen years. But who can tell whether the cotton fly will appear next year, or fifty years hence? No scourge, whether under the form of a devouring insect, or that of a malignant disease, ever became annual in one particular place.—Look at the locust of Egypt: suppose that voracious insect to become annual, the prolific valley of the Nile, once the granary of Asia and Europe, would become a howling desert. Look at the plague that devastates, sometimes, Smyrna and Constantinople, did the cause of that distemper act with the like intensity at each return of the season, those flourishing cities would long since have been numbered with Thebes and Memphis. Let the cholera or yellow fever prevail in New-Orleans every year, as it has at times, and that

great emporium of the South-West would become a puny village. Is there not an invisible hand that sways the destinies of the world? a hand that stays the devastations of plague, pestilence, and famine!

The cotton fly belongs to that numerous class of insects known to naturalists under the term of phalena or moth tribe. It resembles the butterfly tribe in many respects, but its chief point of difference is that all moths fly at night, and are attracted by bright lights, and may be seen darting through the flame of a candle, during the summer and fall months, to the great annoyance of those who desire the benefit of its light. Butterflies fly only during the day.

The following are its specific characters, without the technicalities made use of by the naturalist, so far as they could well be avoided:

Antennæ, or little horns projecting from the head, setaceous or terminating a point like a bristle, of a drab color, and five lines in length, being about half of the length of the body.

Wings incumbent, deflexa; under surface of thorax or breast, of a dull silvery white, insensibly terminating on the abdomen and wings in a color tending to a russet; the upper surface of the wings and back varying somewhat in different individuals, but generally of a changeable golden color, with ferruginous zig-zag lines traversing the surface transversely;—posterior margin bordered with a narrow strip of pale pink color, with small denticulations. On the upper surface of the wings there are two black spots, one on each, about the middle of the base; legs white, the four posterior very long when compared with the front ones, which are short and slender; the tail simple. The length of this insect is about nine lines from head to tail. Expansion of the wings at the tips, about the same measurement. To conclude, I will add that the shape of this moth is very much like that of an isosceles triangle, with the line forming the base inflected inwardly about two lines. This peculiar figure is produced by the exterior angle of the upper wings projecting beyond that of the interior angle.

During the present year, the time that my observations commenced for the first time, the cotton fly again made its appearance in the latter part of August, at first making but little progress, but about the middle of September their numbers increased so prodigiously, that in many instances they would eat over a field of several hundred acres in four or eight days.

The number of eggs deposited by the female is uncertain; they are smaller than a mustard seed, and always deposited on the under-surface of the leaf during the night—in a few days their eggs hatch. The worm, at first a minute living point, falls immediately to work to devour the leaf; its growth is rapid, for its labors cease not night nor day until it arrives at maturity; it then winds itself up into a leaf by means of a web resembling *cobweb*, casts its skin and changes into a chrysalis, in which state it remains ten days, then it bursts the thin walls of the chrysalis, and comes forth a perfect insect. In turn, it begins the work of reproduction, deposits its eggs, and in the ten more days it dies.

Thus, in every ten days there is an additional generation, and they go on increasing *ad infinitum*. As soon as the leaves were consumed in a field, this great *army* took up its march; some in search of comfortable quarters, where they might repose from their labors; others on a foraging expedition to replenish the means of their subsistence. The first took shelter in the first leaf they met with, but generally they proceeded as far as the fence, a barrier beyond which they never traveled, where they found a plentiful supply of leaves, in which they enveloped themselves. The second division extended their march much farther, sometimes traveling half a mile from the point whence they started, perishing by cart loads for want of food and the many casualties to which their journey subjected them, such as carriage wheels, heat of the sun, and the rapacity of birds.

Here, then, it would appear was an end to the cotton worm, for a season at least, for those which yet remain in chrysalis in the fence corners, will change to the fly in ten days. But where are now the cotton leaves upon which the pregnant female is to deposit her eggs? There is not one left. If they are placed on any other leaf the eggs may hatch, but the worm must perish, as we have just seen them perishing by myriads while wending their way through a various and luxuriant herbage in search of that food intended for them by nature. In ten days from the time that the worm becomes a chrysalis on the borders of the cotton fields, a host of flies are seen issuing therefrom: they go forth in search of food for their forthcoming progeny; now it is to be found their days are numbered—in ten more if they meet with no cotton leaves they themselves must die, and thus put an end to the whole race. But their search is continued, and now when the weary insect is ready to finish its term of days, a tender but sparse foliage crowns the leafless twigs of the cotton plant, on them the eggs are deposited: they hatch, the worm eats, returns again to its chrysalis. The cotton stalk still puts forth new leaves, they grow and expand until the fields again look green; ten days, aye, forty elapse, yet there is not a worm to be found. One would have thought that this second crop of leaves would scarcely have been sufficient for a single repast for them, yet the food they so lately devoured with such voraciousness is now left untouched. What is the matter? Why don't they eat, their food is spread before them? Read on, the answer will be found in the sequel. Let us examine the cause. In nearly every fourth leaf we find a chrysalis

writhing and contorting itself at the touch. Ah! here is the explanation of the difficully. This is no ten days' chrysalis, but that in which it is to hibernate, possibly for one winter, perchance for twenty. Let us take a pocket full of these home, and place them beneath tumblers, and wait patiently to see what they will produce. If I had found a treasure, my delight could not have been greater than I experienced at the idea of unraveling this mystery. But man is prone to disappointment, as we shall soon see. About the fifteenth of November the insect appeared, but, *mirabile dictu!* as different from the cotton fly as it is possible to suppose one insect could differ from another. It belonged altogether to a different family, a description of which I give, as follows:

Antennæ filiform; black, six lines in length. Palpi four, two external and two intermediate—the external white, twice the length of the other two, in shape angular, the angle projecting externally. The two middle are straight, scarcely perceptible over a strong light; they are of a dark color. Wings four; hymenopterous; incumbent, extending to and exactly even with the end of the tail; shape of the wings, which are small and extremely delicate, are like that of a fan. Front legs half the length of the posterior, of a uniform orange color; the intermediate legs very little longer than the anterior; the thighs of a deep orange color, the rest of the leg annulated with orange and white. The posterior legs long in comparison to the others; thighs of a deep orange color, the rest of the leg annulated with black and white, the rings being larger than those of the intermediate. The trunk is of a uniform shining black, as would be the upper surface of the abdomen also, were it not for the very narrow white bands which connect the black scales together, giving to the abdomen an annulated appearance; these white lines do not encircle the abdomen, but terminate uniformly on the sides. On the under surface of the abdomen these white rings again commence, which are much larger than those on the upper surface, causing the abdomen to look almost white. The tail terminates in a bifurcated sheath, inclosing a long blunt sting, projecting considerably beyond the tail, and forming a very prominent feature in the general figure of the insect. This is a small slender insect, much longer than the honey bee, but not so thick.

Now, it is evident from its specific character, as well as from its parasitic nature, this insect belongs to that numerous class called *ichneumons*, of which there are upwards of five hundred species. As I am not at present in possession of any practical work on Entomology, I cannot determine the species of this ichneumon, but to show that it differs in some respect from the family to which it belongs, I will quote a paragraph from a work before me, in which are set forth some peculiarities belonging to that class of insects as a genus:

"The whole of this singular genus have been denominated parasitical, on account of the very extraordinary manner in which they provide for the future support of their young. The fly feeds on the honey of flowers, and when about to lay her eggs, perforates the body of some other insect, or its larvæ with its sting or instrument, at the end of the abdomen, and then deposits them. The eggs in a few days hatch, and the young larvæ, which resemble minute white maggots, nourish themselves with the juices of the foster parent, which, however, continue to move about and feed until near the time of its changing into a chrysalis, when the larvæ of the ichneumon creep out by perforating the skin in various places, and each spinning itself up in a small oval silken case, changes into a chrysalis, and after a certain period they emerge in the state of complete ichneumons."

It will be seen that there is a peculiarity attached to this ichneumon not included in the above description, that of appropriating the chrysalis as well as the larvæ of other insects, to the use of their young. All ichneumons that I ever read of spin their own chrysalis, but this is the prince of parasites, for not content with eating the substance of his neighbor, he seizes also on his house. So far as I have read concerning this curious family of insects, this is a nondescript. As an example of these insects called ichneumons, I may mention the *ichneumon seductor*, or dirt-dauber, well known to everybody as that wasp-like insect which builds its clay houses on the walls, and particularly in the recesses of windows, to the great annoyance of the tidy housewife.

Thus is answered the question why the cotton fly did not again eat up the scant foliage which subsequently appeared on the stalks. This little usurper goes forth in search of "whom it may devour," and as soon as he finds a house built and well provisioned, he seizes upon it for his posterity, which he does in the following manner: when he finds a cotton worm he pierces it with the instrument with which his tail is armed, and deposits an egg; the cotton worm soon spins itself up into its case, there to await the period of its perfection, which never arrives, for soon the egg of the ichneumon hatches, and falls to devouring his helpless companions. This work of extermination continues until there is not a vestige of the cotton fly left. I venture to say, while I am now writing, (first of December,) there is not an egg, chrysalis, or fly, in the confines of the United States. My speculations on the nature and habits of the cotton fly have led me to adopt the following hypothesis: That it is a native of tropical climates, and never can pass a single winter beyond them, consequently never can become naturalized in the United States, or any where else where the cotton plant is not perennial, for nature has made no provision by which they can survive more than ten or twelve days, therefore they must perish wherever the cotton plant perishes during a period

of five or six months. That wherever they have prevailed in our cotton growing regions, it is when they have become very numerous and consumed all the cotton in their native climes, and then go in search of their food in more northern climates. It is not to be presumed that this happens often, but the same remark will hold in regard to the cotton fly as it will to many other insects, that owing to some unknown cause they become exceedingly numerous, but at long and irregular intervals. The locust has already been noticed as an example, and many more might be cited. I, however, will mention another to which I was an eye-witness: About eighteen years ago the *green*, or *blow-fly*, became so numerous that thousands of animals perished by them, as also some human beings. The least spot of blood, the moisture of the mouth, eyes, or nose, was sufficient to cause a deposit of eggs. Sick persons, particularly those who had not proper attention, suffered. Several negro children who came under my notice, fell a sacrifice to them, and it was with difficulty that many others were saved. In these instances the fly deposited the eggs within the nostrils, where they soon caused death by producing inflammation of the brain. This fly is annual, and scarcely ever deposits its eggs on an animal, except it be the victim of a running sore; but at the period alluded to above, it appeared that there was scarcely animal flesh enough to feed the maggots of this numerous host. It is but once within my recollection, and neither before nor since have I heard of such ravages of the green fly. Why they should have existed in such incredible numbers at the time referred to is a question not to be easily answered.

There are three circumstances upon which I found my arguments in support of my hypothesis of the cotton fly. First: Nature has made no provision by which it could survive the winter season. Second: The irregularity of their appearance. Third: Their progress from south to north, and from west to east.

It may be remarked on proposition First, that all insects included within the genus *phalena*, hibernate in the state of a chrysalis, therefore it is utterly impossibly for the cotton fly to hibernate in that manner, as they remain but ten days in chrysalis. The fly does not hibernate, for the period of their existence is but ten or twelve days. It cannot be in the state of the egg, for it is a law equally inflexible with regard to this tribe, that the egg must be deposited on the leaf on which the larvæ are to feed, and the reason is very plain, for these larvæ, when first hatched, are minute living points, of an exceedingly helpless nature, almost devoid of locomotion, or possessing it in too small a degree to enable it to go in search of its food. But let us suppose that the egg does survive the winter, how does it happen that when the worm first makes its appearance it is found on the very summits of the cotton instead of the lower branches: parts that it would reach the soonest if it proceeded from the ground upwards.

The *phalena mori*, or silk worm, is an insect of the same genus as the cotton fly, and whose habitudes are very much the same as the latter, tropical in its nature, confining itself to a particular vegetable, the different species of mulberry, and being short lived in the chrysalis, remaining in this state but fifteen days. At the approach of winter, when the mulberry trees cast their leaves and remain leafless for many months, these insects, in our climate, would all perish, were they left to themselves. But art in this respect has triumphed over nature, for the silk grower at a certain season gathers a parcel of eggs and places them in a cold dark place until the mulberry tree shall again afford them food in the spring, and in this manner they are perpetuated, and this is the only possible way that they could be preserved here; they are like some tender exotic, which flourishes as long as the warmth of the hot-house affords them a congenial atmosphere, but perishes if left to buffet the rigors of winter.

Proposition Second. Here I contend that when an insect is a native of or naturalized in any country, they are always governed by some invariable laws which determine their appearance. The grasshopper is annual, coming every spring or summer; the locust of our climate septen-decennial, appearing once in seventeen years, but the cotton fly has no regular periods of return, showing that when it reaches our climate it is by some casualty.

In proposition Third, I maintain that if the cotton fly sojourned here during the winter or winters, that when it did appear at all, it would do so simultaneously through the whole cotton district, instead of which we see it progressing regularly from south to north, and from west to east.

Such are the speculations that I have entertained concerning the cotton worm, from which I conclude it originates in South America, and reaches us through Mexico, and never can become a denizen of our soil.—*Gorham.*

SUMMARY OF COTTON.—According to the New Orleans price current, of November 31, the total receipts of cotton, at all the ports since September 1st, 1852, amount to 426,537 bales, against 303,972 to same date last year, making an increase of 119,535 bales. Total exports to foreign ports. 163,707, against 125,310, to same date last year; increase this year 38,397 bales.—Total exports to northern ports 71,017, against 78,764 to same date last year; decrease this year 7,747 bales. Stock on hand and on ship board at all the ports 261,431, against 205,761 at same date last year; increase this year 55,670 bales.



American Cotton Planter.

MONTGOMERY, ALA., JULY, 1853.

N. B. CLOUD, M. D., EDITOR.

Our Agents.

WM. STRICKLAND, Book-seller, No. 28, Dauphin street; BOULLEMET'S LITERARY DEPOT—corner of Royal and Dauphin street; H. H. CARVER & Co., Battle House Book Store, Mobile; from any of whom the back numbers may be had.

A. P. PFISTER, Exchange Corner; C. R. HANSFORD, Market street, Montgomery.

With *The American Cotton Planter*, our agricultural friends will find all the new and valuable publications of the day, either literary or agricultural, at the above-named Book Stores.

Mr. AMOS TRAVIS is our agent at Gainesville, Sumter county.

Mr. N. PLUMB, Sparta, Conecuh county.
E. B. FOX, Sandy Ford, Fla.
Capt. J. JACK, Havana, Greene county.
WM. G. BREWER, Tuskegee.
H. C. BISSELL, Carlowville.
Dr. WM. CUNNINGHAM, Burnt Corn.
Dr. J. F. DORTCH, Camden, Ala.
E. J. CAPELL, Esq., Rose Hill.
ISAAC PARKS, Oak Bowery.
Dr. BATT PETERSON, Clayton.
JAS. MONTGOMERY, Fife, Ala.
N. A. MCMILLAN, Canton.
Dr. J. E. POELLNITZ, Montpelier.
G. M. REYNOLDS Mr. TURNER, Mr. B. M. CLARK, and Mr. M. P. DOUTHIT are our traveling agents.

☞ Our subscribers will please notice, that as our terms are invariably cash, the receipt of the journal is the best evidence that we have received the *dollar*. Any subscriber having ordered the Cotton Planter in compliance with the terms on the title page, will confer a favor, should it fail to reach him, by informing us at once. All remittances at our risk through your Post Master, or registered by him. It will readily be perceived that this arrangement will save much unnecessary trouble in receipting &c., and be entirely satisfactory.

Correspondents.

We have received communications since our last number from Dr. M. W. Philips, of Miss., Dr. W. S. Price, of Marengo, Ala.; Sumter, So. Ca.; H. of Oak Bowery, Ala.; Prof. L. Harper, Eutaw, Ala.; Jno. A. Whetstone, Robinson Springs, Ala.; C. B. N., Ala.

Okra Rope.

During the late session of the Agricultural Association in the city of Montgomery, we were shown some specimens of Rope, and the preparod fibre, from the common garden Okra, by Mr. Saltmarsh, of Cahaba. The specimen of Rope was short, perhaps 20 inches in length, of even and uniform appearance, something like the Manilla Rope, and we should think equally strong. We were so much engaged at the time the specimens were handed to us that we did not ascertain from Mr. Saltmarsh where, or by whom these specimens were prepared. We should be pleased to hear more of this subject, and hope that Mr. Saltmarsh will furnish our readers some more definite information, or request the gentleman to do so who prepared the specimens referred to. The specimen may be seen at the Variety Saloon of Mr. Swan in this city.

We conclude in this number of our paper the Essay of Gov. Jas. H. Hammond, of South Carolina, on "Marl and Marling," prepared at the instance of the Agricultural Society of Jefferson County, Ga. We hope our readers have not only read this Essay with care, but studiously, as it embodies clear and distinctive views of the character and value of calcareous manures, and also by far the most extensive practical experience to be found, at least in the culture of cotton. There are few subjects so full of interest to the planter determined on improving his lands—after grade-ditching and horizontaling—as that of inorganic or mineral manures. Time, labor and capital expended within the bounds of a liberal but judicious economy, in the application of lime in some of its forms to our lands, under a proper system of culture, will continue to pay handsome annual dividends for a whole generation. It is proper, however, to remark in this connection, that mineral manures are not to be relied on exclusively, as it is clearly shown, both by analysis and by practical experience, that they do not of themselves furnish all the conditions necessary to the full and complete development of vegetable perfection.—It is not, however, by any means a settled fact, that in the use of inorganic or mineral manures, in connection with a properly adjusted system of rotation and shift of crops, that the full and complete development of vegetable perfection may not be attained. It is our opinion that it may be, and hence it is that we have entertained such high opinions of the value of marl and marling.

Agricultural Society of Robinson Springs.

In this number of the Cotton Planter, we publish the Premium List of this young and flourishing County Society. The officers of this Society are entitled to much credit for their energy and industry in making arrangements for the coming Exhibition and Fair. The officers of the Society are

ABSALOM JACKSON, *President.*
BOLLING HALL, C. M. JACKSON, } *Vice Presidents.*
R. J. GLENN, *Treasurer.*
J. H. HALL, *Secretary.*

Potatoes.

We are pleased to be able, so soon after the important enquiries were made in our April number—"Can Irish Potatoes be raised in this climate? be saved through the winter and spring? if so how?"—to furnish our readers two communications in this number answering said inquiries. We are personally acquainted with both the gentlemen, and know them to be men of experience, intelligence, and practical in their operations. We hope our readers generally will try the experiment. As trifling as this matter may seem in its individual details, in the aggregate it shows an annual expenditure, by the planters of the Cotton States, of a sum little short of two millions of dollars for seed alone, to say nothing of the amount expended for table supplies during the winter and spring, up to the middle of April or first of May.—That we can grow as fine, rich and wholesome Irish Potatoes in the South, and as many per acre, as can be grown in any part of the world, is a truism proved every year, but the mode of saving and preserving them good has not been understood. If a convenient and safe mode for keeping and preserving the Irish Potatoe through the fall and winter in this climate, was generally understood, it would add materially, not only to the comfort of living, but to the value of our farm operations, in the saving of the money now expended for Potatoes in the North and Northwest. If there are no natural and insuperable barriers to our growing and preserving them for ourselves, it is our duty as well as interest to use all diligence to endeavor to ascertain the proper mode, and to have such valuable information generally disseminated among our people.

Dean Cotton.

We have received from a subscriber of Texas, a sample of the Dean Cotton. The sample may be seen by those who feel an interest in the subject, at Mr. Swan's. It is a beautiful specimen, fine and silky, and quite as long as the Mastodon. It is no doubt a new variety, and will contribute materially toward improving the staple of the country. We have in our possession, as Secretary of the Agricultural Association of the Planting States, a couple of packages of the Dean Cotton seed, sent from Texas to the Association, by Mr. Stewart, of Texas.—Having arrived here after the adjournment of the Association, they will be taken to Columbia, S. C., next November, subject to the disposal of the Association among its members. As our subscriber does not propose selling his seed, we append, for the information of our readers, what he says of the Dean Cotton in a brief postscript:

I raised four bales last year, for which I received 12c. per pound at Galveston. Some of the same kind sold for 18½ cents. I have made a fair trial of the yield of the Dean Cotton, and find it (the yield) to be as good as the Petit Gulf, and the picking to be much better, on account of the size of the bole. Two of the Dean boles are aqual to three of the Petit Gulf. The greatest advantage, however, is in the price of the article, which is about 33⅓ per cent. more than the other kind.

Should your Alabama farmers once try the Dean Cotton, they will never plant any other kind.

Very respectfuily, &c.,
W. C., Sr.

CAMDEN, *Ala., May 9th*, 1853.

DR. N. B. CLOUD—*Dear Sir:* As our country is finely adapted to raise the best sheep in the world, I send you an extract from the *Camden Temperance Recorder*, which gives the result of a personal examination of the editor of two one year old lambs I have of the Cotswold breed of sheep. My buck, though only one year old, is larger than any three common sheep in my county; and the quality I most admire of these sheep, is that they are so easily kept fat. They are finely formed, of immense body, and great weight when cleaned for mutton. The meat is worth double that of the common mutton, from its fine flavor. I expect to get in the Mobile and New Orleans market for my full bred Cotswold mutton from 25 to $40 each. The wool is fine, long, and of great strength—three or four times as much as the common sheep. A gentleman from Germany, a few days past, looked at my buck, and remarked that he had seen twenty thousand in one flock in his country, but that his eyes never saw such an animal as mine. I beg you, Doctor, if you should pass my way, to call and see for yourself.

Most truly yours,
JOHN M. BURKE.

Mammoth Sheep.

We availed ourselves, on Wednesday last, of an invitation from Col. John M. Burke, near this place, to examine a pair of year old lambs, of the *Cotswold* breed, which he has recently brought into this State at a very great expense, and we were much pleased with our observations. They were purchased of Col. J. W. Ware, the importer, and arrived here about the first of January last, after a sea voyage of six weeks, which has given them a temporary back-set. These are the finest sheep we ever saw.—The buck was weighed in our presence by the Rev. Mr. Newman, who happened to be present, and his weight was 204 lbs., and the fleece upon him would, we think, weigh from 12 to 15 lbs.—The ewe is equally as large. The wool of the sire of these sheep is *sixteen* inches in length—a sample of which is now in the Patent Office at Washington City—and his weight is 420 lbs.—The fleece of those we saw is from *ten* to *twelve*

inches long—a specimen of which may be seen at our office. Col. Burke thinks his buck will reach 350 or 400 lbs. at three years old. This young buck was weighed by Mr. Lindsay in January last, when his weight was 170 pounds—showing an increase of 34 lbs. when compared with his weight a few days since. He was laid on his back for our inspection. His body is very large, and resembles the beaver, with short legs, and a brisket like a beef, and is well proportioned in every respect.

The Cotswold sheep are now regarded as the finest in the world; for mutton they have no equal. The wool is worth 75 cents per pound, from which the Muslin de Laine is manufactured. We were shown a strand of yarn made from this wool, and its strength is equal to flax of the same size. These sheep are easily kept, and always ready for mutton—our climate being well adapted to their growth, as has been ascertained.

We noticed, from extracts from the *American Farmer*, *Lynchburg Virginian*, and *National Intelligencer*, that these sheep sell for mutton, (to go to New York, Baltimore, and Philadelphia,) at from $25 to $30 each. Col. Burke believes that by the cross with the common sheep, he can make his muttons weigh 150 pounds; this will be a great improvement in the common sheep. His intention is to supply his friends, next fall, with bucks of this description at $20 each; quite a number are already engaged. They will be exceedingly low at that price, and it will be money wisely spent which will be returned with interest. Every lover of good mutton, and those who wish their wool improved at least *one hundred* per cent., should obtain this cross, which, when effected, will produce the most valuable sheep in the United States. We ardently wish Col. Burke *good luck* and abundant success in the raising of these sheep. We may have occasion to speak of them again at some future time.

[FOR THE AMERICAN COTTON PLANTER.]

Irish Potatoes.

DR. CLOUD—*Dear Sir:* Being by nature half an Irishman, and having become, from necessity, almost a thorough-bred son of Erin, at least so far as a diet of *praties and milk* can change the nature of a native born Carolinian, I propose, for the benefit of your private correspondent, to furnish you my mode of rearing and preserving through the winter, the same.

It is notorious that the Irish Potatoe is a great lover of moisture, the heaviest crops being uniformly raised in *wet seasons*. This fact suggests ways moist; and the mode of planting best calculated to secure this end, is, I conceive, the following: Thoroughly pulverize and enrich your soil to the depth of 18 or 20 inches, or deeper if you please; trench your ground with a hoe or spade 20 inches apart, each trench being 8 inches deep and from 6 to 8 inches wide; place your cutting "*right side up with care*" in bottom of trench, sprinkling or scattering hogs hair or rotten cotton seed over, barely sufficient to cover them, filling up the trench level with surface with pine straw. In this state let them remain until the sprouts begin to show themselves above the straw, when the whole bed, or plot of ground, should bs covered 8 or 10 inches deep with straw. This method will secure a good yield the dryest season, and enable the good housewife to gather a *mess* daily, selecting the best and leaving the small ones, without so much as soiling her hands even. Last of July, or first of August, take up what may have been left from the daily consumption, or a portion thereof, and plant them as above directed, which will yield a fine crop by frost, and which by the following management you may keep till the following spring. Dig them on a dry day; the same evening put them in small banks of 8 or 10 bushels, covering with pine straw 6 or 8 inches thick, over which place a coat of earth of half the thickness, protecting the whole from rains, and consequently freezing, by a good shelter. Last year I housed from a piece of ground about 30 feet square, six bushels of fine Potatoes, made from sprouts that put up from the Potatoes made in the spring, and which had been left in our daily collection for table use. These were neither replanted nor worked the whole season, the straw effectually keeping down all grass and weeds, and retaining a sufficiency of moisture. For three years past I have had a supply both summer and winter, besides furnishing some of my friends with seed in the spring.

If I have succeeded in making myself intelligible to your numerous readers, and putting them in a way of making their own supplies, without being dependent on a Northern market, I shall feel that I am sufficiently remunerated for the trouble I have been at in detailing the above.

Plantation Economy.

[FOR THE AMERICAN COTTON PLANTER.]

No. 8.

Dr. N. B. Cloud—*Dear Sir:* That draining land of itself will do all good that manure of itself will do, no one should count upon, but that both are more or less requisite, sometimes one more than other, may be taken for facts admitted.

The past year I had a very rich piece of ground ditched. It had been deadened in 1847, and not planted, only enclosed for pasturage, but two wet for that. The following ditching was necessary: one ditch east and west, on north side 460 yards long, 4 feet wide, 2 to 8 feet deep. On the west side was a ditch; on the east side, for 800 yards, was one needed to turn water from side of a long slope; one was run through the centre southward near 800 yards, to receive water from hills and a guard drain emptying therein made by a plow; then two others midway between the east and middle and west and middle ditches, thus taking near or quite 1760 feet of ditching to make good all the work, there being springs at foot of hill which had to be cut off by ditches, and then ditches to empty into main ditch at the south. The consequence was I made over 40 bushels of corn per acre, and had to plant three times ere I could get a rise, to stand, as the land was so light and so dry, that birds picked it up as fast as it rose. This year in cotton, and before the rot and rust appeared, those 10 acres really bid fair for two bales per acre.—The land, where it would have been always in the way, or to be put in good condition—no manure needed- in my north field, which will be 70 acres of bale land for twenty years, if judiciously cultivated by change of crops.

Whereas my East field now only requires one ditch across east and west 660 yards, protecting 60 acres, with cross ditches to empty—and should be underground drains—then manure will make it yield with any land of same grade. I would remark, there is now on the 60 acres one ditch due east and west 660 yards, on north side, another south of 440, and one east of 440. The proposed one of 660 will cut the field in two, and drain the flat, level portion, upon which the water lies.

Though I hauled out this year 118 three yoke ox loads of manure, with seed from 100 bales of cotton, yet I give not all the credit to manure. I deem previous crops of pea-vine and corn-stalk turned under 4 to 6 inches, with the deep and thorough ditch, to have done much.

Pea-vine not only does good by being turned under even in March, but protects land, *shades* it, and thus aids in condensing valuable gasses from the atmosphere—a matter I have insisted on as being highly advantagious for some ten years.

There are other aids which we must use, as capital, being as important in the future prospect of the plantation as any thing else.

I have not tried enough to advise, only that others more able to lose by the experiment may test, and which an agricultural society should offer a premium for—the use of Plaster and of Lime. A friend of mine says by sowing a bushel of Plaster per acre on the pea-vine, that the pea is not only improved, like clover, but that the succeeding corn or cotton shows to the very row the decided improvement. I know not the cost of Plaster, but if an agricultural society would select a careful member, furnish the Plaster, and give a premium worth all labor if a failure, and require a strict and accurate account, it may be that great good would result. And perhaps best to try peas sown different quantities per acre, with half of each row sown with the Plaster, and thus giving us accurate data. Thus suppose No. 1, 30 yards wide and 128 long, be sowed with 1 peck of peas; No. 2, same size, with 2 pecks, and so on through to 10 acres; thus upon 74 yards of the whole Plaster be sown 1 bushel per acre, or 5 bushels to the half. Then we have 10 half acre lots to show effect of Plaster, and thick and thin sowings, with 10 other half acre lots only showing effect of peas as to shade, &c., and then which pays best. This has been similarly proposed in some agricultural journal, may-be in Southern Cultivator, and perhaps as important a suggestion as could be made.

Thus, my friends, if we will make it a point to examine where we can make a good, or the best investment, we may learn that increase of property is not always the best increase of wealth.

All this—heretofore written—is only a tithe of what might be said on plantation economy, and a further notice may be given as the spirit moves me. Though I cannot promise method, as I keep no notes of what I have written, and may occasionally go over the same ground. I hope my brethren will take the will for the deed, and believe me when I say, if I could I would point out to each man what is always best. Until I am so competent, please bear with me and believe me truly yours.

M. W. PHILIPS.

[FOR THE AMERICAN COTTON PLANTER.]

Preserving Forest Growth.

Dr. Cloud: I promised to furnish you with a better digested experiment in regard to the above caption. In advance of the description of my present, and as I believe, improved plan for effecting this object, of anxious prosecution by thought and occasional action for these dozen years, you must permit some theorizing, which has formed the basis of encouragement in making this third effort, after two signal and destructive defeats.

The plat of land under experiment containing thirty acres of heavily timbered upland, the estimate made of the growth and litter was, that it would cover the entire surface one foot thick if condensed with undecomposed

vegetable matter, and when reduced by disintegration to mould, or loam, would give four inches. Experiments on the formation of loam have made it to appear that a century was required for Nature to form one inch on undisturbed forest lands. If this is a true result, my plan of forming loam will do in a few years that which will require Nature four centuries to effect; besides the advantages derived from shading, which would be equal to another inch; and with five inches of vegetable mould, no planter will ever leave his plantation on account of poverty of soil, although it may require some other additions, such as marl, guano, &c.

In clearing the plat under experiment, all trees a foot and under in diameter were taken down and cut into ordinary rail lengths, the limbs well cut to pieces for the convenience of adjusting,—grubbing thoroughly done; after which stakes were arranged parallel with and thirty feet from a side margin, planting the first stake 36 feet from an end margin, the next 60 feet from that, the next 36 feet, then at 60 feet, and thus through the row, having a 36 feet space at each end, although it should require the timber piles at the end to be shortened or lengthened according to circumstances. At 6 feet distance from these stakes, and opposite, another set were planted, and 60 feet from these commenced the next row of stakes, observing the distances given for the first, not having any regard to the 36 feet spaces, being opposite in each row. This being done, straight poles, or logs, were placed between and in the course of the stakes, in the 60 by 6 feet spaces, between which the brush was placed, and on it the remaining timber was laid, so as to make a dense heap, and without any swingletree catcher projecting, so that the plow can be used up to the logs without inconvenience.

The reasons for this arrangement of the spaces are, by leaving the 36 and 60 feet spaces for cultivation, the one-tenth of the land only is occupied by the timber.—The 60 feet between rows of timber also allow of the equal and convenient distances of 6, 4 or 3 feet for rows of crop. The 36 feet between timber piles admit passage, and causes the piles to be so dense as to prevent shrubbery, weeds and grass putting up through it.—With this arrangement of distances, nothing has to be carried exceeding 30 feet for adjustment, and there is a place convenient to put any timber that may fall at any time afterwards without injuring the crops, and the annoying operation of burning old logs dispensed with.—Every thing that has grown on the land, or may in the future, can be placed out of the way of cultivation, and made profitable when the land needs help.

It is contended by some that the spot in the field where we would place manure to be applied to the crop, is the proper place to make compost heaps, that the second hauling of vegetable, or other matter, may be avoided. These timber piles are in that place, having to carry no manure exceeding 30 feet, and the vegetable matter already there to be acted on by the other ingredients; after a proper time remove the undecomposed part of the heap and the compost is ready for scattering, and the vegetable matter is already collected to make more, and so on until the timber is entirely returned, with the annual refuse growth, to the earth from which it grew: thus nothing will be lost except by washing or evaporation.

Objections are anticipated and I will endeavor to meet them. It will appear to many a troublesome operation to dispose of timber in this way, but experience has taught me that there is no time lost by it. The time required to adjust the timber is not more than that which would be required to burn it, and, having a convenient place to put all falling timber and other obstructions during future cultivation, without the trouble and loss of burning, will pay a heavy rent for the tenth occupied by the timber; and it is not probable that the piles will increase in size, as the annual decay will keep pace with the accumulation. The first year's planting, with the leaves and other litter on the land, may present a difficulty, to obviate which mark the rows with a scooter and follow in the same with a 24 inch new sweep, which will deepen and widen the furrows so as to admit of the seed being covered with a small plow, avoiding the litter almost entirely; the first working to be done with a turn plow, which will pile the trash in the middle, after which draw it to the crop and break out the middle; a sweeping will then finish the work. Always work new ground with a sweep after it is broken up, without a coulter before it. One sweep is equal to a half dozen hoes to cut weeds and bushes in new ground.

As I advance with this experiment you will be advised of the advantages or disadvantages, and particularly the latter, as a knowledge of faults is more necessary than that of perfections in view of profitable progress.

WM. S. PRICE.

[FOR THE AMERICAN COTTON PLANTER.]

Plantation Mechanism.

DR. CLOUD—*Dear Sir:* An article in your May number, taken from the Cultivator, and headed "The Forces of the Farm," has so interested me by exposing some of the defects in our system of education, and the fallacy of depending on Northern ingenuity for our farm implements, that I am induced to offer a short article, hoping to call the attention of others to the same subject.

The principles of mechanical philosophy are few, simple, unchangeable, demonstrable, and entirely consistent with each other—but by permutation are capable of an immense variety of combination, arrangement and modification—adapting them to all our various purposes. Hence, after we become familiar with these few plain principles, the whole practical utility of the science consists in the selection of such combinations and arrangements as are best adapted to the particular want. And should we, instead of exploring the regions of fancy in search of principles that have no existence, confine our

efforts to the careful and sober consideration of what we have, we will find ample material wherewith to construct whatever machines or implements we may need, and will be infinitely better able to adapt them to our peculiar necessities, than persons can possibly be living a thousand miles frrm us in a different climate, on different soil, and under different institutions.

The Cultivator's remarks in regard to the plow, are just and forcible, and had he substituted three feet per second, in place of four, as the speed of a team in plowing, would have been nearer correct. The consideration of this subject has occupied my leisure moments during the past six years, and although I have not retrieved all of the 500 per cent. loss that the Cultivator exhibits, I have reduced the labor of plowing from one-third to one-half in my own farm operations.

In considering these subjects we will not refer to our own clumsy implements, but will begin with that world-renowned effort of human genius, the Eagle Plow. Let us examine it. We are first attracted by its enormous iron mould-board, reaching down to the bottom of the furrow, and opposite to it, for the purpose of resisting the great lateral pressure it has to overcome, we find a corresponding land side, or bar of cast iron, giving the plow somewhat the appearance of an obtuse wedge, which has to be forced along the furrow while lying on its edge—hence a considerable portion of the furrow-slice has to be pressed out of its bed side-ways, creating a great lateral pressure against the mould-board, which reacts against the land side. This is proved by the rapidity of its wear, and accounts for a part of the loss of power alluded to by the Cultivator.

Now suppose we construct a plow so that it cuts off the furrow-slice, and then insinuates itself under it in the form of an acute wedge flat-wise, and thus raises it entirely out of its bed, and then by a little curve, or twist, guides it to where you wish it to fall. In this operation there is no lateral resistance to overcome—no land side is necessary—and the weight of the furrow-slice sliding up the plow tends to keep it to its place, and, so far from requiring a heavy cast iron mould-board, a thick piece of sheet iron is all-sufficient to give the slice its proper direction.

In cultivating a stiff bottom, I found it necessary to throw it up into high beds, and to do this obtained an Eagle Plow, which I worked with two horses, but since that time have obtained some plows of the above construction. I am now able to make more perfect ridges, and more of them, with one horse, than I formerly did with two, and I find a similar advantage in every other department of the plow culture, and I doubt not the like improvement could be effected in many of our implements.

And now, instead of forcing our youths into the already over-done professions, if we could but induce them to devote their time and talents to the exploration of this wide and open field of human improvement, and to the investigation and development of these principles—so beautiful because demonstrable—so useful, because they substitute the dormant forces of nature for muscular exertion—so elevating, because they lead us to the contemplation of Nature's laws and their Divine Author. Yes, could we but give this direction to the public mind, how soon might our highly favored State take that high position to which its vast resources, its favorable position, and its delightful climate, so evidently point. How soon would multiplied facilities for travel and transportation open a market in every neighborhood. How soon would our mountain fastnesses unlock their rich treasures and pour them into the laps of our citizens and into the coffers of the State. How soon would we be relieved from the heavy tribute we are under to foreign commerce, skill and industry, and learn to apply our own exuberant fuel and wasting water power, in place of pandering to foreign despotism. And may we not reasonably hope that this elevated and liberal policy, thus excited, would extend itself to the political circles, and tend to drive demagogues from their selfish absurdities and false issues, and supply their place with *men* who can see their own aggrandizement in the public good—men who would uncover the fountains of knowledge, and turn loose its healing streams, and invite *all* to come and drink freely. Then, indeed, might we boast of achieved independence, and Alabama would never again be under the humiliating necessity of appealing to confederate compacts or constitutional rights for the salvation of her institutions, but her now contemned alliance would then be *sought* by her less favored sisters, not to vilify and subvert, but to avail themselves of the high prestige of her fame.

H.

Oak Bowery, May 28th, 1853.

[FOR THE AMERICAN COTTON PLANTER.]

The following Table shows how much one team and plow will perform in a day in acres and tenths:

Width of furrow in inches.	*Acres and tenths.*	*Width of rows in feet.*	*Acres and tenths.*
5	1.0	2	4.8
6	1.2	2½	6.0
7	1.4	3	7.2
8	1.6	3½	8.4
9	1.8	4	9.6
10	2.0	4½	10.8
11	2.2	5	12.0
12	2.4	5½	13.2
14	2.8	6	14.4
16	3.2	6½	15.6
18	3.6	7	16.8
20	4.0	7½	18.0
22	4.4	8	19.2

The above Table is constructed on the presumption that the team moves at the rate of about 3 feet per second, or 2 miles per hour for 10 hours per day. Horses and mules in good condition will do this, and if you would keep them in good condition it is enough for them to do.

H.

[FOR THE AMERICAN COTTON PLANTER.]

A TABLE,

Exhibiting the number of Stands, or Plants, on an Acre of Land, for any distance apart from 10 *inches to* 6 *feet inclusive.*

	10 in.	12 in.	15 in.	18 in.	20 in.	2 ft.	2½ ft.	3 ft.	3½ ft.	4 ft.	4½ ft.	5 ft.	5½ ft.	6 ft.
10 in.	62726													
12 "	52272	43560												
15 "	41817	34848	27878											
18 "	34848	29040	23232	19360										
20 "	31368	26136	20908	17424	15681									
2 ft.	26136	21780	17424	14520	13068	10890								
2½ "	20908	17424	13939	11616	10454	8712	6969							
3 "	17424	14520	11616	9680	8712	7260	5808	4840						
3½ "	14935	12446	9953	8297	7467	6223	4976	4148	3565					
4 "	13068	10890	8712	7260	6534	5445	4356	3630	3111	2722				
4½ "	11616	9680	7744	6453	5808	4840	3872	3226	2767	2420	2151			
5 "	10454	8712	6969	5808	5227	4356	3484	2904	2489	2178	1936	1742		
5½ "	9504	7920	6336	5280	4752	3960	3168	2640	2263	1980	1760	1584	1440	
6 "	8712	7260	5808	4840	4356	3630	2904	2420	2074	1865	1613	1452	1320	1210

To use the above Table, find the distance of your plants the widest way in the left hand column, then trace the line in which it stands to the right until it intersects the column headed by the number that expresses the distance of the narrow way, where you will find the number sought—thus: Suppose your corn rows are 5½ feet apart, and your plants 20 inches apart in the drill, you will have 4,752 plants on an acre, &c. But, if in checking your land for hills or cross culture, you lay off your first rows one-eighth nearer than you wish to have your hills, and then let your checks cross these rows at angles of 60 and 120 degrees respectively, you will have 12½ per cent. more hills on the acre, and still preserve the same distance that you would have if checked square. The proper angle is readily obtained by taking 3 rods of equal length, lay them on the ground, and let one side coincide with the rows already laid off, and then you can take choice of the other two sides to give direction to your checks. I have found the above method of laying off of considerable advantage in particular instances, but do not recommend it for general adoption.

H.

P. S. If your readers or correspondents should imagine that they see any thing paradoxical in the above, it can easily be demonstrated to their satisfaction.

[FOR THE AMERICAN COTTON PLANTER.]

Long Staple Cotton.

MR. GEO. W. THOMPSON—*Dear Sir:* In accordance with the promise I made you at the time you gave me of your long staple cotton seed, that I would communicate with you from time to time through the medium of the *American Cotton Planter*, in regard to their growth and the prospects of the experiment, I now address you for the first time.

I received the seed you sent me from Fort Jessup in good order and in proper time. In order to secure a good stand, I planted the half bushel on one acre of land. I so arranged the acre as to have one half on old land (cleared 14 years ago) and the other half on third years land.—The quality of the land, as you know very well, is much such as your Fort Decatur place.

The land was, in every respect, in the condition that I desired it. The old part lay in fallow last year, and the new produced a crop of rye.—I laid off the land in rows five feet wide; I then run around these with a small turn plow (No. 10, Ruggles, Nourse & Mason,) which made a nice, compact ridge. I then applied 300 lbs. of guano, (the genuine Peruvian.) I adopted a plan in its application which several years experience has convinced me to be the best and most economical mode of applying guano to cotton. From buckets I scattered it equally and evenly over the ridges previously made. The advantages of this mode of applying guano are these: first, it is scattered on the top and sides of the ridge which forms the base or centre of the bed; secondly, the guano thus applied occupies a larger space than when applied in the drill, and will

consequently supply with food a larger number of the radicles of the plant. And again, the advantage of thus applying it, over broadcasting it, is found in the economy of not disturbing it (the guano) in the subsequent culture.

Having thus applied the guano, I completed the beds by an additional round upon each ridge with a No. 0, Ruggles, Nourse & Mason's Eagle Plow. On the 18th of April I planted the seed, after the Chinese mode, by running two drills on each bed 15 inches apart, where I had the seed dropped, five in a place, 36 inches apart in each drill, but so arranged as to have the hills in the rows to alternate, or stand as though they were 18 inches apart on a single row. I obtained a fine stand, and the cotton now promises fully up to my expectations.

You informed me, if I am not mistaken, that on sandy table land, in the vicinity of Fort Jesup, at an altitude of 1200 feet above the level of the ocean, you raised this cotton successfully, averaging on a field of some 22 acres, a bale to two acres, which you sold in New Orleans at 22 cents per pound. It occurs to me that our locality, here in Alabama, at an altitude of but about 900 feet above the present level of the ocean, and within a few miles of where the gulf once extended, will enable us to grow it quite as successfully; and my opinion is, that by the application of 300 lbs. of guano per acre, we may produce a bale per acre; and I further believe that, by the use of the Parkhurst Cylinder Gin, that we shall be able to make it worth 30 cents per pound.

You shall hear from me again about picking time, when we shall be able to form some more correct idea of the probable yield, and whether or not it is likely to deteriorate materially, which I shall be able to determine by comparison with the sample sent me.

C. B. N.

P. S. I should be pleased to get some of the seed and the cuttings also, of the hedge thorn, of which you spoke so favorably when I saw you. This is a subject of prime importance to cotton planters in the rapid declention of our timber.

June 20th, 1853.

A rich vein of copper-ore has been discovered in Morgan county, Tennessee.

From the Southern Planter.

Cultivation of Tobacco.

A very important part of making a crop of tobacco, is to have an abundance of good plants in good time. Excepting the advent of a hail storm about the time when we intend to make the first large cutting, or a freshet when we have a fine crop growing in its reach, I know of nothing so vexatious to the planter as a scarcity of plants.—Indeed this ought to be more mortifying to him than either of the above casualties; for they are unavoidable, while every planter who *will*, can always raise plants enough in good time. Some years ago a very skillful and energetic planter told me that he would dismiss his overseer for a failure in plants as surely as for any other cause, and said that no man is excusable for such failure. Then I thought his judgment harsh and unreasonable—but now I agree with him. An experience of seven years has convinced me that he was right, for in that time I have invariably succeeded, while many around me have frequently failed; and I have had fine plant beds where no one else expected any thing but emphatic failure.

Land bearing a virgin growth of small post oak, and sloping gently southward, is preferred. In this region such land is generally of thin soil, but very retentive of moisture, even on the ridges and hill tops. The wood for burning should be hauled to the place before Christmas, or as soon as possible; and the bed should be burned the first suitable spell. The common practice of burning a long heap of logs, laid upon skids, is considered a safer plan; the firing ought to be begun very early in the morning, whenever the earth is dry enough. It cannot be too dry—but many beds are ruined by burning too wet. The first fire ought to burn an hour and a half; after that, one hour will be enough in a place if the fires be kept well burning. Great care should be enjoined on all hands to see that this is done, and that all leaves and trash are swept off clean in advance of the fires, and that the fires are not moved too far. Attention to these points is necessary to ensure a well burnt patch, and a good burning is essential to success.

It is good policy to burn just so much in one place as the force can complete in one day. By

morning the earth will be cool and ready to be broken up. Upon the manner of doing this a great deal depends. Beds on the hills, if imperfectly broken, are very apt to fail in dry seasons. The operation should be performed by the most careful men, under the master's or manager's eye, (N. B.—*The former is the best,*) not with the common hoe, but with grub hoes, long, strong and sharp. The hoe should be driven up to the eye; then by using the helve as a lever the earth is easily loosened or broken up, and the hoe withdrawn, or rather lifted out, without inverting the soil or exposing the clay. The strokes of these hoes should be close, so that no unbroken interval may remain. During this process a good many small roots will be removed. The next step is to chop the surface closely with hill hoes, the hands walking backward; then rake over. A second chopping and raking complete the preparation. But in large beds on hill-sides there ought to be one or more small drains opened through the beds; and all beds ought to be protected from washing rains by good trenches around them.

Experience has taught me that double the usual quantity of seed ought to be sown, and I never put on 100 yards less than a table-spoonful and a half, heaped slightly. Mix the seed thoroughly with clean, dry ashes, and sow one-half the mixture over the bed, and *returning* on the first track, sow the other half. The bed must then be trod closely by the hands, and covered tolerably thick with straight, fine brush. I like to lay the brush up and down hill—tails up; and the buts of the second course upon the tails of the first. This arrangement tends to prevent washing, and on southern slopes lets in the sunshine better than any other. On level beds the brush should be laid north and south.

If the soil be poor, it is well to put on a cart load of fine manure after breaking up the bed, and chop it in with hoes. On all land this will give the plants an earlier start. But whether this has been done or not, the bed should be top-dressed soon after the plants are up well, and half the quantity of seed first sown ought to be scattered over at this time. If the first sowing give plants enough, the resowing will do no harm, for the first growth will *smother* the last. But if by any accident the first be destroyed, the last may be forced, by frequent manuring, to the size for planting by the middle of June. The beds ought to be top-dressed several times a week before any plants are drawn, and after every drawing. Fine, well-rotted stable manure, mixed with the sweepings of tobacco-house floors, may be used; but I prefer a compost made in the stables, by littering them with tobacco stalks, and sowing a little plaster on the litter occasionally. This should be made in the spring, before any grass seed ripen; and the horses should be fed on corn fodder while the stalks are in the stable. When taken out it ought to be heaped under a shed, and when wanted for use, a little beating and picking will make it very fine.

When the above process has been faithfully applied to my beds, they have not failed, even in the most difficult seasons, to yield from 10 to 15 or 20,000 plants per 100 yards; and since I have adopted it, I have had an abundance of plants, and many to spare every year but one.

The land for tobacco, if it be an old lot, and particularly a clover lot, should be broken up close and tolerably deep in autumn. If the subsoil be a cold, wet, or tenacious clay, only the surface should be inverted by the plows—and a subsoil plow ought to be run in the furrow of the turning plow; but if it be a dry, red clay, a few inches may be thrown up by the turning plow without injury. In any case, the land ought to be replowed about mid-winter, say in January, for the better amelioration of the soil, and still more for the destruction of the cut-worm. I have not often been troubled by this pest, except when this plowing has been omitted. The best time to apply manure is at this plowing; but if not applied then, let it be put on by all means before the corn crop is planted, and plow it in as fast as it is hauled to the ground. A heavy drag ought to be run over the land just before it is bedded, and the beds thrown up with one-horse plows.—When ready to plant, send a steady fellow, with a three-foot stick in his hand, walking along the beds and testing his stride occasionally by the stick. Chop in his foot-prints with hill hoes, clap and plant thus *in the beds.* If the land has been prepared as early as indicated, there will be *season* enough in it to plant any time in May, without a rain, and the plants will live better than

when planted just after a rain; and if the weather continue dry after planting, there will be less danger of injury to the tobacco from the formation of hard lumps around the roots. If proper attention has been given to the plant beds, the plants will be ready by the middle of May. But if it should be necessary to plant in June, or to replant much in that month, it is an excellent practice to put a good handful of dry wheat chaff upon the plant as soon as it is stuck. This covering is better than any other I have used, and, so far as I know, the credit of *discovering* it is due to an overseer in this neighborhood. The chaff must never be removed; every living plant will grow up through it in a few days, and thus all "missing" hills will be easily recognized in replanting.

Instead of "ridging down," or "scraping down," it is far better to put a little fresh earth to the plants at the first working. Run three-tooth cultivators twice in the row, and deep as one horse can draw them; and then let every hoe hand take one bed and work it as in weeding corn. As soon as the tobacco *starts*, or as soon as the grass begins to spring up, or whenever a crust forms on the surface, it will need a second working. I am disposed to think that the growth of the crop depends mainly upon the working; at any rate I have never seen a good crop made that had been slighted at this time. It is now that the plants *take a set*, either running up with slender stalk, and narrow, short leaf, or spreading out broad and leafy. It ought to be thoroughly stirred now, and this will be done best by running broadfoot coulters close to the plants, two or four times in a row. Follow the coulters with small dagons, throwing the earth to the plants. Then with hoes dig deep in the step, and finish by putting up moderate hills. An old and skillful planter of my acquaintance says that *fire* may be prevented, in a great degree, *by making small hills*. He says facts led him to this belief, and he shows his faith by his works. The explanation is, that a large hill absorbs more water and retains it longer than a small one. It is probable that very deep plowing is a better preventive. It is chiefly upon light soils underlaid by tenacious clays that the worst fire appears, and deep plowing is certainly the preventive in such lands; but the two may be combined.

After the second working, one or two slight scrapings up will complete the cultivation.

These remarks, Mr. Editor, about the cultivation of tobacco, are based upon either experience or observation, and indicate the mode I intend to practice in future rather than that I have pursued. I have either tested in my own crop, or seen in others, the value of every part of the process, except the subsoiling.

As to the proper time of cultivating tobacco and housing it, or the best mode of curing and ordering it, I shall say nothing. These are matters, in my opinion, which every one must learn for himself by actual experiment. General instructions, indeed, may be of some service, but would mislead as often as not.

Yours,

A PLANTER.

Prince Edward, Jan., 1853.

Miscellaneous.

[FOR THE AMERICAN COTTON PLANTER.]

DR. N. B. CLOUD—*Dear Sir:* I am in receipt of the June number of your truly valuable, interesting and edifying journal, and in its perusal have enjoyed "a feast of reason and a flow of soul." The connected history of the proceedings of the Slaveholding States Congress, at Montgomery, in May last, are literally correct, and I regret that the periodical press generally have paid so little attention to a subject matter of such vast, vital, and momentous consequence to our dearly beloved sunny South. Perhaps, however, that, as the next Convention comes on at Columbia, South Carolina, in November next, they may in due time advert to the subject, and powerfully aid us in awakening the dormant energies of our highly favored section, and assist us in laying the foundation upon which to erect the superstructure of Southern greatness and independence.

The slaveholding States are situated in the most highly favored portion of the United States—have free egress and ingress, not only from the Gulf of Mexico, but borders many hundred miles upon the Atlantic ocean, watered by the noblest rivers on the face of the earth, and, as regards *fertility of soil*, the North cannot begin to com-

pare with us. View for a moment the alluvial lands of the Mississippi and tributaries, the Brazos, Colorado, Trinity and Del Norte! Our climate is of the most salubrious character, and mineral springs from Maryland to Mexico that the whole world cannot beat; and last, though far from being least, view her citizens! Gallant, enterprizing, generous and magnanimous to a fault, cast in Nature's finest mould, and always ready "to do or die." In an agricultural point of view we make cotton, the monetary lever of the world, (indeed we may not inappropriately denominate it the peace-keeper of the world,) rice, sugar and tobacco upon which not only is the North dependent, but likewise a great portion of Europe, and it is spreading out into Asia, and is being manufactured in the ancient Byzantium. With all these immensely great and almost incalculable advantages, what do we lack to be the greatest, freest, happiest and richest people on the earth? One word will almost cover all the ground—*union, concentration, combination*, with a broadcast diffusion of agricultural statistics and facts. Let the press, mighty and potent as it is, come to our rescue, of which I am confident, and instead of having only 50 or 60 members of the Association, we can and ought to have almost as many thousand.

If this hasty scrawl will in any manner aid in "rolling on the ball," I may in a subsequent number give a letter on the all-important subject cotton.

With sentiments of high regard, I am truly thine,

JOHN A. WHETSTONE, M. D.

Robinson Springs, Ala., June 8th. 1853.

[FOR THE AMERICAN COTTON PLANTER.]

Green Sand.

EUTAW, Ala., June 17th, 1853.

DR. N. B. CLOUD—*Dear Sir:* Having seen that the Green Sand of the cretaceous formation, which crops out in many places here in Alabama, especially in the region of the lower cretaceous formation along the Alabama, Warrior and Tombigby rivers, etc., is used in some of the Northern States, as for instance in New Jersey, as a manure, I have subjected a specimen of that Sand taken out of a gully on the west side of Eutaw to a qualitative chemical analysis, which gave the following result:

The specific gravity of the Green Sand is 2.487; one hundred parts contain 63.05 parts of quarzose and chloritic sand, 32.934 parts of finely divided matter, and 4.016 parts of matter soluble in dilute acid, of iron, a small quantity of silicic acid, lime, magnesia, potash in considerable quantity, and traces of soda, sulphuric acid and chlorine.

The Green Sand of our cretaceous formation, which extends from the southwestern part of Georgia, through the southern part of Alabama into Mississippi, is therefore a valuable manure for exhausted cotton-fields, especially for clay and loamy soils, for instance for prairie land; for sandy soils it contains, perhaps, a little too much sand.

I intended to subject the Green Sand to an accurate quantitative analysis, but am prevented from doing so at this moment; I shall nevertheless make such an analysis as soon as possible, and communicate to you the result.

Yours very respectfully,

L. HARPER.

☞ Many of our readers in Alabama will doubtless feel much interested in the above communication of Prof. Harper. It proves the existence in our State of this valuable and permanent fertilizing agent, "Green Sand," and in abundant quantities. We are pleased to observe that Prof. Harper intends extending his researches on this subject and communicating the same for the Cotton Planter.—[ED.

From the Soil of the South.

Remedy for Cholera.

MONTGOMERY, Ala., May 3, 1853.

DR. DANIELS—*Dear Sir:* Since the appearance of Cholera on my plantation in the fall of 1851, in the treatment of the disease, I have in essentials observed this practice. Whether attributable wholly or in part to it, or to good fortune, I know not, but the success attending it has certainly been remarkable.

To one bottle blackberry cordial, add one oz. of powdered Jamaica ginger, one teaspoonful of African cayenne, of which give to an adult one wine glass full promptly, and if necessary, repeat; into each wine glass full of which, when taken, add the following articles—four drops spirits of camphor, four drops essence of peppermint, and ten to twelve drops laudanum.

At the same time and promptly, clothe the patient in flannel; apply a mustard plaster to the stomach; put him on an arrow-root diet, and require him to avoid exercise. In every case of thirty or forty, the discharges were checked, a copperish taste in the mouth, or slight ptyalism pro-

duced, and tendency to depression arrested. The costive state of the bowels usually continued from three and a half to five days, without pain or distension of stomach, when upon occurrence of an evacuation, the patient was well.

No estimate can be made of the number of lives lost, after they have been saved, by the apprehension of internal inflammation. Whether purgatives are necessary or not, in cases where the bowels are made torpid by large doses of opium or morphine, or inflamed by severe astringents. I leave to the profession, as I have never tried them. My aim has steadily been to arrest the disease with the mildest remedies I could; studiously and above all things, avoiding aperients of all sorts, whether of physic or diet, which, by re-establishing the disease, gives nature a double duty to perform—that of contending with both the disease and the remedy.

In several cases, both of men and women of unusual stoutness, who at the end of two to three days were losing strength from the insufficient support afforded by the arrow root, I mixed with the arrow root some grated crackers and boiled milk, to which a teaspoonful or so of pure old brandy was added, without injury, but with evident advantage. To my most intelligent and favorite servant, on the fifth morning of costiveness I gave half an hour before breakfast, a few mouthfuls of broiled ham, made red with cayenne, a small well made biscuit or chicken, and half a cup of coffee, dram of brandy to sustain his stomach; which treatment acted like a charm, causing a copious discharge in forty-five minutes, and making him feel, as he said, as pleasantly and as well as he ever felt. The arrow-root being very digestible and easily absorbed by the system, leaving small fecal remains. I had no fears of internal inflammation, from its contents; but still was very watchful of pain, distension or distress, intending to apply the mustard plaster as a counteraction; which fecal, however, I never had occasion to use.

RECIPE FOR DYSENTERY.

One wine glass full of blackberry cordial as usually prepared in families, with good brandy; four drops spirits of camphor; four drops essence of peppermint; twelve to fifteen drops laudanum; one tablespoonful of pure brandy, once, twice or three times per day; the laudinum to be added or not, as preferred; but commonly best taken just after the discharge, or at any time.

As in Cholera, it would doubtless be best to wear flannel; live on arrow root, and be governed in severe or chronic dysentery by the advice given for the treatment of that disease. I should state, that though I have seen many cases of collapse in Cholera, I have never had charge of one, having preferred prevention to cure, which made me very vigilant.

Respectfully and truly yours,

H. W. VICK.

Prof. Warder's Geological Report.

To the President and Members of the Cincinnati and Little Rock Slate Company.

Gentlemen—In pursuance of your instructions, I left Cincinnati on the 5th of February, and proceeded with all despatch to Arkansas—reaching Little Rock on the 15th. Here I immediately devoted myself to the investigation of the subject matter in hand, and explored thoroughly the rocky formations of the country, but especially the slate rocks, and those intimately associated therewith. Their real consociation was not an easy matter at once to unravel, nor was it easy directly to comprehend the upheaving forces that have at one period, so remarkably upturned the strata. Here, however, as well as in my further investigations, I gladly embraced the happy opportunity that accidentally offered, of enjoying the company and assistance of Dr. George Shumard, the eminent Geologist of Arkansas, who, indeed has had fine opportunities of studying the rocky strata of this young State, old in formations, and rich in mineral wealth, which, under a judicious survey, sustained by liberal outlay, she may one day have developed, when indicated by Dr. Shumard's reports.

Advantages of Position.—These consist in the inclination of the strata and the position of the river at the base of the cliff—the stream has laid bare the rock, and left little to strip off—while it is a ready recipient of the slack slate, that will form a good shingle beach for a landing. The direction of the river is not exactly parallel with the plane of strata, hence a succession of these is shown, and may be worked The inclination is such that an exposeure of one stratum will enable the workmen to disengage the layers with very little labor, requiring much less blasting, and the consequent loss and fracture. By disengaging them below, they may be pryed up, and will slide down to the foot of the quarry.

Character of the Slate.—The rock is sufficiently indurated to form a durable roof; it is sufficiently pure to avoid decomposition by chemical action, and fissile enough to be split readily to any desired thickness.

Having made these satisfactory discoveries, my next object was to endeavor to ascertain the extent of the formation containing this valuable mineral, which appears to embrace a strip about a mile in width, extending in a direction south of west at least to the Wachita river, and perhaps much further. This forms a portion of the range of the Wachita Hills, the southern range of the Ozark Mountains In the opposite direction, crossing the river at Little Rock, the slate extends for some little distance in a direction north of east.

In all this range, however, there are few portions where the slate can be worked to advantage, owing to its dip, which carries it under the superincumbent sand rocks, except where the excavating forces have removed them, as is the case on the Saline and Wachita river, but more especially on the Arkansas as at Little Rock, where a larger stream has cut through the mountain, and turning laid bare an extended cliff of slate, most favourably situated for working, as the strata are nearly parallel to the course of the stream, and being inclined towards it, present the finest field for excavation. Other portions back from the river, independent of their inland situation, with the attendant difficulty and enormous expense of transportation, are generally covered with a larger proportion of drift which is to be removed, besides having the inconvenience of a very small valley to receive the deposit, and they nowhere present such bold cliffs as are found upon the main stream.

Good slate has been quarried on the Saline river and near the Hot Springs on the Wachita, but the difficulties of inland transportation will always prevent their coming into competiton with that quarried at Little Rock.

On the other hand, if we follow the strata across the river we shall find this vast excavating force has entirely removed the rock in question for many miles, nor is it known again to appear except in the unfavorable position of dipping under the sand rock, as exhibited beautifully in the section made by the river cutting through the ridge known as Big Rock. On the upper end of this section, the slate again appears rising from beneath with the same disadvantageous aspect for working, also becoming confused, contorted and convoluted in a low ridge with a subordinate anticlinal axis, which forms a beautiful section of great geological interest to the student, but very unsatisfactory to the quarryman.

Having heard many vague representations of the extent of this slate formation upon the Arkansas river, and deeming it important to the interest of the Company to ascertain whether they were well founded, I considered it my duty to continue the exploration in that direction, and accordingly ascended three hundred miles to Fort Smith, cutting diagonally the whole distance through a coal basin devoid of indurated rocks, but giving good indications of coal. Beyond Fort Smith the carboniferous limestone appears in nearly horizontal strata.

Being very anxious to ascertain the upheaving force that has disturbed the strata near Little Rock, I explored the region lying to the South and South-west of that city, and found indications of slate everywhere to the South-west for some distance, till cut through by the extensively excavated valley of the Fouche a small stream, which, however, becomes formidable when filled with the back water of the Arkansas river.

The southern border of that valley is abruptly terminated by an irruption of beautiful granite, rising into a low ridge, with an axis nearly or quite parallel to the direction of the slate. Here was found ample cause for the upheaval, and also for the induration of the rocks within a certain distance of the focus of heat subheaval, which such an irruption of granite undoubtedly formed, and to the Geologist, the discovery of this granite possesses the deepest interest, as it dispels all doubts as to the probable condition of the slate in question. Here is the explanation of the hardened rocks, both aluminous and silicious.

In conclusion, allow me to congratulate the Company upon the admirable facilities which are presented by the peculiar location of their excellent quary of this valuable mineral, which we may hope to see devolved at an early period, and brought to our doors—a most valuable roofing material.

N. B. In order that the Company may form some idea of the extent of their vein of Slate, we would remark that the depth of the plunge is undoubtedly many hundred feet, a greater depth than has ever yet been worked, or, indeed, it is practicable to work. We are informed that quarries have been opened in Wales to the depth of 800 feet below the surface of the earth, while the Pensylvania Slate Company have not yet excavated over 125 feet in depth, although they have been successfully operating over 27 years and employed 100 hands at a time in excavating.

But as a basis of a calculation, the Cincinnati and Little Rock Slate Company can depend upon a solid mass of smooth slate of at least 75 feet in thickness obove the bed of the river. Multiply this by the area of the Company's vein, which is about 100,000 square feet, and we have the immense aggregate of seven million five hundred thousand cubic feet of slate, even by quarrying 75 feet deep. Multiply this by 4, and it swells the amount at a depth of 300 feet to thirty million cubic feet of slate — From a cubic foot of rock, allowing one-third for waste, a workman can split 50 good smooth slate, of suficient thickness for roofing. This gives us a full aggregate of fifteen hundred million slate, or fifteen million square of 100 feet, of regular size for roofing, and will keep the Company fully employed, with all the resources they can bring to bear for the whole 50 years of their charter.

Upon enquiry as to the expense attending excavation, we learn that after stripping the surface, (which must necessarily be first done,) a single hand can quarry, upon an average, about one square per day, of 100 square feet, at an expense of $1 25. The freight and drayage from our wharf will not exceed $1 75 per square. To-

tal cost, delivered in Cincinnati, $3 00 per square. This can be rapidly sold for cash in any quantity, for $6 00 per square or more, as Pennsylvania Slate now commands $8 00 per square, with no prospect of a reduction in price. Thus it will be seen that one-half of the amount from sales will be profit to the Company, and from the basis of a large dividend of profits, after the quarry shall have been fairly opened. All of which is respectfully submitted.

JOHN A. WARDER.

From the Alabama Planter.

Southern Native Trees and Shrubs.

GENTLEMEN—This being the proper season of the year to purchase and transplant evergreens and all other shubbery in this vicinity, induces me to remark, that having observed the late and annual collections of "new and foreign plants," imported direct from France, "by some honest Frenchman, and modestly offered for sale to our citizens as *the rarest ever discovered by the Horticultural Society of France,*" illustrated, in most cases, by beautiful and highly colored plates: as for instance, *Perpetual* Raspberries, size of a hen's eggs; mammoth Cherries, twelve to the pound; Camellias and Roses, with blue and tulip colored flowers, &c., &c., and withal *selling us* our *native trees and shubbery*, as follows: *Tulip Tree, Magnolia, Spiræ, Azalea, Honeysuckle, Andromeda, Laurels, Illicium, Viburnums, Kalmais, &c., &c.*, raised in France from seed procured in our immediate vicinity, and in all cases represented as "*beautiful foreign plants,*" with *une belle fleur, coulier changeont blue et zebra, perfum fort odorodoriferant.* I have also noted the fact, that of all those "*Je ne parle pas Anglais,*" who have thus vended plants in this city, the original never returned the second time—"dead men tell no tales," and their honest successors invariably deny identity or acquaintance with their illustrious predecessors, although from the general character of the plants and the plates that purport to illustrate them, they are invariably from the same identical *work shop.* Who, in this city, permit me to ask, ever purchased from one of these Greeks, a *Camelia*, a *Rose*, or any other plant, or fruit tree, that proved true to its description? The diversity and extent of our native trees, plants and shubbery, for useful and ornamental purposes, superb richness and diversity of foliage, their magnificent and variegated bloom, are not to be equalled in any part of the globe. Yet how seldom do we find their beauties appreciated until they make the tour of La Belle France. Herewith I attach a memorandum of a few of the "*French natives,*" which have been successfully cultivated at "Oakland," and universally admired for their beauty and "Southern rights attribute," viz:

Liriodendron, or *Tulip Tree*—Admired for its conical form, saddle shaped leaves and tulip-like flowers.

Magnolia, Macrophylla, Grandiflora and *Evergreen Swamp.*

Illicium, or *Aniseed Tree*—Has very fragrant leaves, and the capsules having a very strong smell of Aniss when rubbed.

Vibarnum—(*Snow Ball Tree*)—The former has pale yellow, and the latter snowy white flowers, which appear during the winter months.

Yucca,—The entire species are desirable from their palm and oriental character, and as being evergreens, blooming freely and magnificently.

Laurus—Sweet Bay—Wood resembles satin; the foliage forms a dense and picturesque mass of very fine deep green, inclining to olive, covered with berries which are dark purple. Both the leaves and berries have a sweet, fragrant odor and taste.

Prunus Carolineanus—By some call *Laurea Mundi* and *Wild Orange*—Magnificent evergreen shade trees; has no superior for ornimental hedges.

Acer Herbatum, or *Bearded Maple*—Very ornamental.

Azalea, or *American Honeysuckle*—Very ornamental; flowers orange, white, and variegated colors; very fragrant.

Calythansus, or *Alspice Tree*—Very desirable as an under shrub, with chocolate colored blossoms. The flowers have an agreeable scent, like that of Alspice.

Chionanthus, or *Fringe Tree*—Well known for its immense recemes of white flowers.

Cornus, or *Dog Wood*—Ornamental, with their early and variegated flowers and berries.

Cratagus, or *Evergreen Cockspur*—Neat foliage; flowers early in spring; berries beautiful.

Hydrangea—oak leaved—An elegant plant when in leaf, and much valued on account of the

great profusion of its elegant flowers, which are monstrous.

Illex, or *Common Holly*—One of the most beautiful shrubs or low trees for lawns and small groups, on account of its shining green leaves and numerous spikes of coral berries.

Juniperus—A beautiful conical bush, grouping and combining well with *Cedars* and other species.

Philadelphus, or *Large White Flowered Syringa*—Very showy and fragrant.

Spirea Alba—Ornamental and white flowered.

Kalmia—Varieties are beautiful; bloom early in spring and continue in flower a great part of the summer; flowers variegated and fragrant.

Westeria Erutescent—A beautiful climber, having large pendulous branches of blue (pea-like) flowers.

Bignonia Radicans—Trumpet Flowers—Flowers orange and variegated; eminently beautiful.

Lonicera, or *Honeysuckle*—Are not surpassed in profuse and brilliant scarlet, and yellow trumpet flowers, overtopping all other plants.

Brythrina, or *Coral Tree*—Remarkable for its brilliant scarlet flowers.

Respectfully,

WM. DE FOREST HOLLY.

"*Oakland*," *Feb.* 20, 1853.

LIST OF PREMIUMS

OFFERED BY THE ROBINSON SPRINGS AGRICULTURAL ASSOCIATION, AT ITS FAIR TO BE HELD ON THE 2D 3D AND 4TH DAYS OF NOVEMBER, 1853.

FIELD CROPS.

Best	one acre of Cotton	$5 00
"	bale Pea-vine Hay, weight 200 lbs.	3 00
"	bale native Grass Hay, " " "	3 00
"	acre of Upland Corn with sample,	5 00
"	" Lowland Corn " "	5 00
"	" Wheat " "	3 60
"	half acre of Rice " "	2 00
"	acre of Field Peas " "	2 00
"	bale of Cotton, weight 500 lbs.,	5 00

CATTLE.

Best	thorough bred Bull, imported or improved	$10 00
2d	do. " " " "	7 00
Best	thorough bred Heifer, or Cow, "	5 00
2d	do. " " " "	4 00

NATIVE AND GRADE CATTLE.

Best	Native or Grade Bull	$5 00
"	" " Heifer or Cow	3 00

HORSES.

Best	Stallion	$10 00
"	Brood Mare	5 00
2d	" "	3 00
Best	Colt,	3 00
"	pair of Match Horses	5 00
"	Single Harness Horse	3 00
"	Saddle Horse	3 00

JACKS, JENNETTS AND MULES.

Best	Jack	$8 00
"	Jennett	5 00
"	Team of five Mules	5 00
"	Mule	3 00
"	Mule Colt	2 00

SHEEP AND GOATS.

Best	Pair improved or imported Sheep	$2 00
"	" Native or grade Sheep	1 00
"	" Goats	1 00

HOGS.

Best	Boar	$3 00
"	Sow	2 00
"	Pair of Pigs	2 00

POULTRY.

Best	Pair of fancy Fowls of any variety	$2 00
2d	" " " "	1 00
"	" Ducks	1 00
"	" Geese	1 00
"	" Turkeys.	1 00
"	" Pea Fowls	1 00
"	variety of fancy Pigeons	1 00

HOUSEHOLD DEPARTMENT.

Best	Bacon Ham, regardless of age	$1 00
"	Jar of Lard	1 00
"	Lot of hard Soap	1 00
"	Loaf of Wheat Bread	1 00
"	" Corn Bread	1 00
"	Sponge Cake	1 00
"	Pound Cake	1 00
"	Jar of Preserves	1 00
"	" Jelly	1 00
"	" Pickles	1 00
"	Bottle Catsup	1 00
"	Samples of Jams, Cordials and Syrups	2 00

DAIRY.

Best	5lbs of fresh Butter	$1 00
"	" Butter over six months old	1 00
"	Cheese	1 00
"	Yield of Honey from one swarm with account of management and protection against moths, &c., the Honey to be exhibited with the kind of hive in which it was made	3 00

DOMESTIC MANUFACTURES.

Best	10 yards of Negro Woolen Cloth	2 00
"	Pair of Comforts or Blankets	2 00
2d	" "	2 00
"	Matrass	2 00
2d	"	1 00
"	Carpet	3 00
2d	"	2 00
"	Fly Brush	1 00
"	Bed Quilt	2 00
2d	" "	1 00
"	Coverlet	1 00
2d	"	1 00
"	Counterpane	1 00
2d	"	1 00
"	½ dozen pair Socks	1 00

NEEDLE AND FANCY WORK.

Best	Sample Plain Needle work	$1 00

2d Best	Sample Plain Needle Work,	1 00
"	" fancy " "	1 00
2d	" " " "	1 00
"	" " work	1 00
2d	" " "	1 00

FRUITS.

Best	Sample Apples	$1 00
"	" Pears	1 00
"	Peaches, not less than a dozen	1 00
"	Oranges	1 00
"	Lot of Dried Fruits	2 00

MECHANICAL DEPARTMENT.

Best	Dagon Plough Stock, Plough attached	$1 00
"	Scooter " " " "	1 00
"	Cotton Opener	1 00
"	Lot of Ploughs, stocks attached	8 00
"	Cotton Gin	5 00
"	Lot of Panel Doors, Blinds and Sash	8 00
"	Wardrobe	2 00
"	½ dozen Chairs	2 00

VEGETABLES.

Best	bushel of Irish Potatoes	$2 00
"	" Turnips	1 00
"	and greatest variety of garden Vegetables	3 00
2d	" " " "	2 00
"	" " " Seed	2 00
2d	" " " "	1 00

MISCELLANEOUS.

Best	Ploughing	$3 00
"	One thousand Shingles	7 00
"	" " Lumber	3 00
"	Bushel of Meal	1 00
"	2 galons of Tar	2 00
"	2 galons Spirits Turpentine	2 00
"	Specimens of Earthen Ware	2 00

FINE ARTS.

Best	Specimen of Daguerreotype	$2 00
"	" Painting	2 00
"	" Animal Painting	1 00
"	" Fruit "	1 00

LEATHER.

Best	Lot of Leather	$3 00
"	½ dozen pair Negro Shoes	2 00
"	Pair of Boots	2 00
"	and most useful Wagon Harness	2 00

A committee will be appointed to whom will be referred all articles that may be exhibited from which no premiums are offered, with power to award to such as may be eminently worthy.

Articles offered for premiums, other than Poultry, Cattle, Horses, &c., must have been raised or manufactured in the State. Persons not members of the Association can compete for premiums by paying one fifth of the value of the premium. All articles must be entered on the Secretary's books the day previous to the commencement of the Fair.

Certificates will be required with respect to articles when the award is made to the quantity raised, as to their amount, with a statement of the place, when raised, the mode of culture, and the manures used.

By order of the Executive Committee.

JOS. H. HALE, Sec'y.

THE SOUTHERN LADIES' BOOK, published in New Orleans, devoted to polite literature, and edited by Mrs. L. VIRGINIA FRENCH, at $3 per annum, invariably in advance. Emphatically the Book for Southern Ladies.

Contents of this Number.

Agricultural Education—Premium Essay, ... p. 198
Marl and Marling, ... 197
Cotton—treatment and cultivation—Premium Essay 201
Cotton Worm—history, character and visitations, ... 205
EDITORIAL NOTICES, ... 209
Okra Rope, ... 209
Marl and Marling, ... 209
Robinson Springs Society 209
Potatoes, ... 210
Dean Cotton, ... 210
Mammoth Sheep, ... 210
Irish Potatoes—how to keep and preserve 211
PLANTATION ECONOMY, No. 8, ... 212
Preserving Forest Growth for Manure, ... 212
Plantation Mechanism, ... 213
Table of Plowing, ... 214
" of Planting, ... 215
Long Staple Cotton 215
Cultivation of Tobacco, ... 216
MISCELLANEOUS.
Letter from Dr. John A. Whetstone, ... 218
Green Sand—qualitative analysis, ... 219
Remedy for Cholera, ... 219
Geological Report—the Slate Company, ... 220
Southern Native Trees and Shrubs, ... 222
Premium List of Robinson Springs Ag. Society, ... 223

SADDLERY.

F. A. ROBBINS & CO.,
CORNER WATER AND ST. MICHAEL STREETS,
MOBILE, ALA.,
DEALERS IN
SADDLERY,

INVITE the attention of *Merchants* and *Planters* to their extensive stock, comprising Saddles, Bridles and Martingales, Harness of every description, Leather of all kinds, Saddlery Hardware; Saddlers', Shoe-Makers' Carriage-Makers' Tools, Materials and Trimmings. Also, a superior article of Patent Stretched and Riveted *LEATHER BANDS*, for Cotton Gins, Mills, and Machinery, of all kinds that require Belts. All of which they offer for sale at *Low Prices*, wholesale and retail.

Mobile, July 1st, 1858-6t

J. A. & S. S. VIRGIN,
MACON, GA., AND MONTGOMERY, ALA.,
DEALERS IN
PIANOS, HARPS,
GUITARS, STRINGS,
Sheet Music,
AND A
VARIETY OF MUSICAL MERCHANDISE,
GOLD AND SILVER WATCHES,
JEWELRY, SILVER AND PLATED WARE,
AND FANCY ARTICLES.

N B.—Watches, Clocks, and Jewelry repaired in the best manner.

April 1, 1858-6t

ALABAMA JOURNAL JOB OFFICE, PRINT.



A Monthly Journal, devoted to Improved Plantation Economy, Manufactures, and Mechanic Arts.

Vol. I. MONTGOMERY, AUGUST, 1853. No. 8.

From DeBow's Review.

Cotton and its Prospects.

AMERICAN AND FOREIGN PRODUCT; DEMAND AND SUPPLY OF THE WORLD; INDIA COTTONS AND COMPETITION; FUTURE PROSPECTS, &c.

No agricultural staple has ever produced so great an effect upon the civilization of the world as cotton. You cannot civilize man until you first clothe his nakedness. After the knowledge of good and evil, the first thing done by our early parents was to weave fig leaves for aprons. A naked man must necessarily become a savage man. Heretofore, in the history of the world, there has been no cheap and abundant article raised by which the poor and helpless could be clothed on an extensive scale. Hence it is that civilization has had narrow bounds. Before the invention of gunpowder and artillery, those people who acquired the arts and wealth of civilization were constantly overrun by barbarian and brutal numbers, who banded together for plunder and indulgence. Since those inventions, the wealthy and refined portions of the earth have been able to defend themselves against barbarian hordes, and civilization has been nurtured. The tide has been turned and the course of invasion has been reversed. The more cultivated and wealthy nations have overrun those less so. But the difficulty was to to civltize after they had conquered them. They had no means of extending commerce and its refinements, for want of an abundant and cheap article by which to clothe the nakedness of barbarian life. But the invention of machinery in New and Old England, together with the vast production of cotton by slave labor in the South, have supplied the deficiency.

There is not a battle that England has fought in India, Affghanistan, or China, nor that France has fought in Africa, or that the United States fought on the plains of Mexico, that did not extend the consumption of cotton, and in the results will finally bless the people conquered. It will, in the course of time, introduce trade and commerce, and with them the arts and refinements of life. It is thus that Providence has ever worked upon the destinies of man. When the Lord had selected the firstborn of Egypt as victims to illustrate his power and vindicate his decrees, and left his bloody sign upon the lintels and side-posts, that the destroying angel might pass over his chosen people, this visitation of an awful dispensation was but a part of His providence in working out the redemption of Israel.

And when, in modern times, He chooses to mark the tracks of civilivation upon the bloody fields of conquest, it is but to rouse a barbarian people from their stupor and indolence, and quicken a worthless and profligate mass with new enterprise and life, and fit them for that great day of universal light and peace which He has promised for mankind in the millenium. It is by war you conquer an ignorant and barbarian people,

and then by commerce and trade with them you introduce the comforts and arts of civilization.

In this point of view, the culture of cotton becomes deeply interesting to the statesman and philanthropist. How far can it be extended, and what can we calculate on as to its production in the future?

The aggregate production for the last ten years in the States of this Confederacy, has been 21,370,000 bags, and the average per year has been 2,137,000 bales. We may reasonably infer that it has nearly reached its maximum. In 1839 and '40, the production was 2,117,835 bags; while in 1846 and '47, it was only 1,778,051.—In 1842 and '43 the production was 2,378,875, and in 1844 and '45 it was 3,394,503, which is the largest crop ever raised, except the crop of 1848 and '49, which was 2,728,596, while the crop of 1850 and '51 will be about 2,230,000.—Thus it would appear it has been little or no increase in production in the last ten years, the crop of 1833–'40 being about equal to the last crop. The reason for this is obvious. The general idea used to be, that the only limitation to the production of cotton was the proper climate and soil, and that of course, then, there was scarcely any limit in the United States. But this is a great mistake. The great limitation to *production is labor*. Whenever cotton rises to 10 cents, labor becomes too dear to increase production rapidly. When cotton rises, sugar, rice and tobacco also bear a good price, and breadstuffs rise also, so there can be no rapid transfer of labor, it being in good demand elsewhere. By excluding, as well as we can, all those in the cotton States who are engaged in the culture of rice and sugar, as well as those in the mountains of Georgia, Alabama and South Carolina, who produce grain only, and by adding those in North Carolina, Tennessee and Arkansas, who are engaged partially in producing cotton, we estimate the slaves at 1,200,000. And of these we estimate 800,000 as workers, which is probably not excessive, when we consider that the Southwest, the great cotton region, is newly settled, and the number of children out of all proportion less than in negroes peopled by the natural growth of population. There are about 100,000 white laborers, also, engaged in the production of cotton. This, added to the 800,000 slaves, would make 900,000 actual workers in culture. In the real cotton region, perhaps the average number of acres per hand is ten; whereas up in Georgia, Alabama, Mississippi, South Carolina, Tennessee, and Arkansas, the averege is not three acres white and black per hand. Besides, in these same regions the number of acres in grain per hand will be at least seven. The average per hand in cotton may then be put down at five acres. This would give 4,500,000 acres in cotton. Then take the 2,137,000 bags as the average production for the last ten years, which is a fact, and we have the annual production per acre at a little under half a bale—or a little more than two acres per bale—and to the 900,000 workers it would not be quite two and a half bags per hand. And all practical men know this is about the production in any given section embracing fifty miles square.

To see that the true limitation upon the production of cotton is labor, and how difficult it is to transfer labor, we have but to estimate the capital engaged in cotton.

The Secretary of the Treasury, in his report, made March 4th, 1836, estimated the capital invested in raising cotton at $771,000,000. But he then estimated the number of acres in cotton at 2,000,000, and the annual product at 300 lbs. net cotton per acre, which was entirely too large an estimate. No doubt he toook the estimate of some fine section in Mississippi, made by sanguine young planters as to the production per acre there, and upon that estimatod the number of acres necessary to produce the crop as known. H[illegible] the number of acres too small and the pr[illegible] too large. By the best calculations [illegible] census of 1840, and other sources, we wo[illegible] mate the slaves engaged in producing :—

1. Cotton at 1,200,000, which at $500.....$600
2. Land, 4,500,0000 acres, at $10.....
3. Land in grain, 6,300,000 acres, at $10.....
4. Land in timber, pasture, &c., 14,000,[illegible] at $8.....
5. Mules and horses, 400,000, at $10[illegible]
6. Hogs [illegible]eep, 4,500,000, at $1[illegible]
7. Cattl[illegible]00, at $5.....
8. Plows[illegible],000. at $2.....
9. Wagons and other plantation [illegible] ments, &c.....

Put the amount of capital vested in the production of cotton at.....$800,000,000

Of course this does not embrace the whole capital of the cotton region, commercial, manufacturing, professional, mechanical, and artisan; but I merely mean to calculate the amount actually vested in raising the 2,173,000 bags produced annually for the last ten years, as shown from the tables.

If the 800,000,000 of capital produce on an average in ten years of 2,137,000 bales per year, it will take $100,000,000 of capital to produce 267,125 bags. Thus we will see, that to make this a permanent increase in the production of cotton per annum, for the next ten years, it will require a transfer of capital, or an increase of capital, which is the same thing, of $100,000,000.—One hundred millions of dollars! This calculation is made upon an estimate of cotton at 10 cents, and whenever it gets over that, the increase in the price of labor is so great, that it would require more than the $100,000,000 to produce the 267,125 bags; and when it gets below the 10 cents, then the inducement is not so great to increase the production. A transfer in capital of $100,000,000 from other departments of labor, to that of cotton, cannot be done immediately, without a shock, or a great rise of those productions from which such capital is abstracted. There may be an increase in a cotton crop from fine seasons and suitable years; but take the average of ten years, and it is the true mode by which to calculate the capacity of the country to produce the article, there is a great mistake as to the supposed capacity of the country to produce any amount of



Counting-house clerks, who know nothing of country, make the estimates, and it is taken ranted, in New and Old England, that there difficulty in producing any amount. But n you come to calculate that it takes at least 100,000,000 vested capital to produce permatly 267,125 bags, you then see the difficulties. we calculate again, that the white populaese States now exceeds 20,000,000 of peo that in twenty years the white popula lati e will equal 37,000,000; if we allow for tion here, we will see that the time is ra ming, when a great question in society be: How is that population to be fed!—tofore, our population has been so sparse that there has literally been no heed taken as to what we should eat, or wherewithal we should be clothed. But the time is coming when we shall have to consider this matter. Whenever this becomes the case, there will be little room for cotton.—Land and labor will be too important in raising breadstuffs. The encroachments of the white population, and the demand for food to supply them, will make a great limitation on the production of cotton. This is another element that has never been calculated. The production of cotton belongs to a sparce population, and the protracted attention of slave labor is essential to produce it on an extensive scale. Besides this, the vast increase of white population, will be pressing down upon the slave population. The law of population is, that where two races come into contact, under one government, and, from density, the great interest in society is to support that population, the race which is the stronger will eat out the weaker. This arises from the necessity of self-preservation. In some instances this has been prevented by amalgamation; but where the races are so distinct as the white and black, and where the union is so loathsome, this is impossible.

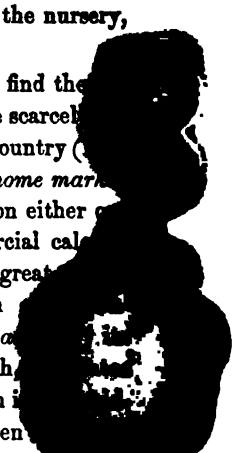
In less than fifty years, this struggle for support will be sensibly felt in this country. In fact, the census of 1840 exhibited symptoms of it.—From 1810 to 1820, the increase in the slave race in the United States, was 30 per cent.; and from 1820 to 1830, it was 29½ per cent. The last census, as far as I have been able to get any authentic information, seems to be a little over 22 per cent. While the increase of the white population of the United States, since 1840, has been over 35 per cent., the increase of the slave population is but little over 22 per cent. It requires but little foresight to perceive the consequences. To say the least, it will press down upon the cotton region in the next twenty years, and limit its increased production. The real cotton belt is at any rate much more narrow than it was formerly supposed to be. The latitude of 32½° may be said to be its centre in the Southern States. The quantity per acre will diminish as rapidly going south of that latitude, as it will going north of it. True, this varies again, according to location.—Altitude and distance from the ocean varies climate more than latitude. Our mountains run northeast and southwest, parallel with the sea-

coast, and terminate low down in Georgia and Alabama, so that as you pursue the latitude of 32½° west, you come to high lands in both these States, which make it difficult for cotton to mature abundantly; and then as you cross Alabama, and come to the depressed valley of the Mississippi, this parallel we find to be the finest for the heaviest production of cotton.

It is said 270 feet in altitude is equal to one degree in latitude. Soon after you pass the Mississippi Valley, and rise to the spurs of the Rocky Mountains, you get rapidly out of the cotton region. The highlands and "*Norther*s" in Texas limit the cotton region in that State to a lower latitude than any other portion of the South.

There are one thousand millions of inhabitants in the world, and of that number not more than five hundred millions, or half the population of the earth, ever use cotton as an article of clothing. The production of cotton throughout the world may be estimated at about twelve hundred millions of pounds annually, of which the United States produce 845,000,000 pounds—calculating the average crop of 2,121,000, and each bag at near 400 pounds. The Secretary of the Treasury (Doc. 146, 4th vol. Ex. Doc. 135–36) estimates the production of other countries as follows, viz: India 185,000,000 pounds; rest of Asia 110,000,000 pounds; Brazil 30,000,000; West Indies 8,000,000: Egypt 25,000,000; rest of Africa 34,000,000; Mexico and South America, exclusive of Brazil, 35,000,000, and 13,000,000 pounds elsewhere. If one half the population of the earth (which is doubtful) now use this twelve hundred millions of cotton, it would make two and a half pounds per head. England and the United States now consume about thirteen pounds per head, and so will all highly civilized and commercial people, while those less so will consume less. The Turks, for instance, only use now about three pounds per head. Suppose, then, the thousand millions of people were to consume only three pounds per head, it would make over 7,000,000,000 bags at 400 lbs. as the annual demand, and allow them two and a half pounds, which is now the censumption of only half the population of the earth, and it would make a demand for over six million of bags. This increasing consumption is going on yearly, as commerce and civilization advance, and the improvements in intercourse will increase it in geometrical ratio; and as nations become more refined and more opulent, its consumption, instead of being only two or three pounds per head, will reach ten pounds in the various forms in which it may be used.—How vain and ignorant it is to talk of production outrunning consumption! Such a conclusion implies that commerce and the arts, with their necessary consequences, wealth, comfort, and luxury, will be checked in their triumphant progress, and mankind fall back into barbarism. The same cry as to production out-running consumption, was made at the increase of the tariff of 1828 and in 1822, when we raised 800,000 bags only, and regularly afterwards whenever the tariff was to be raised, the same assertions were made. As far back as 1820, a Frenchman, named Jumel, introduced the culture of Brazil cotton into Egypt.—The Pacha ordered it to be extended on a large scale. *Niles' Register*, in October, 1825, raised the alarm, and said "Egypt is our great and fearful rival, and has a capacity to supply much more than we have ever produced." So in 1842, the Northern papers, and particularly the *National Intelligencer*, were full of calculations to prove we were to be overwhelmed by the production of East India cotton. And the same papers could be quoted to prove, from figures, that nothing could save the South from the ruin of this competition, but a *tariff for protection*, the best terms with our kind *task-masters*. We were supposed to be infants who were to be kept in the nursery, and fed on pap by *Northern nurses!*

In a Senator's speech in 1842, we find the following: "While we have heretofore scarcely noticed the existence of that immense country (East India) which would secure to us a *home market*, where we might be allowed to trade on either our domestic calculations or our commercial calculations, all at once we find one of our great staples being supplanted in England, and in danger of being *driven from our home market* by foreign producers." (See Mr. Smith's speech, in the Senate, 1842.) Unless we sink down into stupidity and ignorance, the day is past when the miserable cant is to have any control over us. If we are but true to ourselves, we can command the future, so far as our property is concerned. Eng-



land is in such a condition that she must have our cotton. She has $180,000,000 capital vested, and 225,000 persons immediately and actually devoted to the manufacture of cotton as laborers, and 700,000 more dependent upon these factories, and all depending upon the raw material from the United States. Great Britain consumes and manufactures 425,000,000 pounds annually, and the value of her cotton manufactures is estimated at $200,000,000 a year. Her commercial prosperity and credit depend upon this article. In fact, it may be said that her *great Bank* depends upon it, and with it her funded debt itself, and with these her peace and present civil polity. Withdraw cotton from England, and it would produce a convulsion that would shake all her institutions.—Any man can see this from all her movements.—She has subjugated all India to extend her commerce and manufactures. She desolated China, and spread havoc amongst a peaceful people by the thunder of her cannon, for the avowed purpose of forcing them to admit opium and eat it, but in reality to penetrate that mighty empire with her trade and manufactures.

By her treaty with China, and her monopoly and power over India, she now commands the great increasing markets for manufactured cottons over the world. These, with her concentrated banking power and commercial credit, give her a great advantage over all other people. It is all folly to suppose she can ever depend upon India cotton. The length of voyage, freight and insurance alone, would forbid it. The freight on cotton from the United States to Europe, will scarcely ever exceed one cent per pound, and the voyage will not average more than four weeks.—To Europeas, from Calcutta, Madras, or Bombay, it will never average less than a penny per pound, or nearly four cents, and the voyage will average four months. The whole expenses of cotton from the United States to Liverpool, and sold there, do not exceed three cents per pound; while from India, expenses are not less than six cents. Their cotton, from inferiority, is about two cents under ours in price. Suppose "fair cotton" commands in Liverpool 12 cents, ours will, according to the above calculations, yield 9 cents net—while the India cotton will yield only 4 cents net, and a fall in price of 1 per cent. would make it much less in proportion, as the expenses would be stationary.—As to the superior cheapness of Hindoo labor, that appears only on paper. For one well-fed slave with us, managed by the intelligence of our planters, will do more effectual work than five uncertain Hindoos, with their poor diet, and still poorer skill—independent of the extreme vicissitudes of their parching climate.

But there is one thing that will forever prevent India from being permanently a great producer of cotton for a certain supply.

The East India Company is the most stupendous monopoly in the civilized world, and all British India is held in possession by this company. It is a fixed principle with them, never to sell a foot of land in fee-simple, and they only part with it on limited leases, even to the native population themselves. One-half of all that the native population produces is claimed by the East India Company as "land tax;" whether it be indigo, rice, sugar, cotton or opium. This is felt as the heaviest and most grinding exaction, and particularly as to rice, which is so essential to their support. In 1840, it was estimated that 500,000 persons perished in India from starvation and its attendant diseases. Their population is too dense to raise cotton, when food is so essential. If there fall only eleven inches of rain in any year in India, their rice crop falls off, and they have inevitably to encounter famine in its most frightful excess. There can be no calculation made as to the permanent production of cotton to any increased extent, where despotism is so exacting and unlimited as is the case with the East India Company in regard to India—and where food is so scarce, and the vicissitudes of seasons make famine so frequent. The protracted and difficult culture of cotton requires a free government, where those who own labor and capital shall be protected in its free enjoyment. Capital is delicate and sensitive, and will not be invested except where law is fixed, and freedom is a thing beyond the control of government. It takes $100,000,000 of capital in this country to produce annually a little over 200,000 bags of cotton, and here intelligence and enterprise have reached their highest efforts. In India, with their uncertain climate and ill-regulated labor, it would require more than that amount to produce

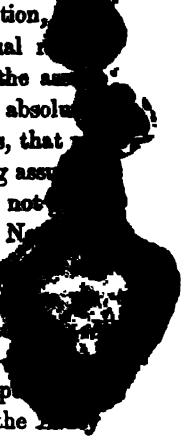
the same. And in such a country, and under such a government, with such uncertain labor, no set of men of any sagacity will invest $100,000,000 of capital in any such enterprise. The importations of cotton from India into England are now actually falling off. In 1837, England imported from India fifty-one millions of pounds of cotton, and in 1838, only thirty-four millions—while she imported the same year, from the United States, three hundred and nineteen millions. In 1844, we raised a little more than 800,000,000 lbs., and of that, 660,000,000 went to Europe.—And there is still a large portion of the population of Europe who do not use cotton, but consume entirely, hemp, flax and wool.

The population of China may be put down at 252,866,000. These together would make 374,546,000. Allow them only two pounds per head, and it would amount to 749,092,000 pounds of raw cotton—and this, at 370 pounds per bag, which is the East India bale, and it would be about 2,002,600 bales. Put the present growth and consumption of India and China at 600,000 bales, and their exports to all Europe 152,175 bales—and it would then leave a deficiency of 1,250,425 bags in those countries, assuming only two pounds raw cotton per head. But as civilization and trade expand in those thickly populated regions, particularly in China, under the British, French, and United States Treaties, formed within the last few years with that immense Empire, we may safely calculate that they will finally consume at least as much as the Turks now do, which is estimated at three pounds per head. This rate of consumption in India and China would produce a demand in those countries alone for one hundred and twenty-three million, six hundred and thirty-eight thousand pounds, or near 300,000 bales at 400 pounds—which is 600,000 more than the crop of the United States. We will at once perceive the deep interest that Great Britain has in controlling those countries. They are at present the great outlets for increased manufactures of cotton, and it is the interest and control she has there, which has, for two years, enabled her to purchase cotton at the enhanced prices, and do a good business, while the American manufacturers may be depressed.

Wherever the British or American trade reaches, there the consumption of cotton will be extended. The Caucasian, and of it the Gallic and Anglo-Saxon races, are the conquering and subjugating races of the world; and it may be said, that, wherever, the banners of European arms or Christian civilization are unfurled, there will spring up markets for the rapid consumption of cotton.

By the blessing of Heaven, we are enabled to raise the most beneficent product that commerce has ever transported for the comfort of the human family, a product destined to make a new era in the intercourse of nations, and to develop new sources of civilization. And to the *slave-holding* States of the Union, it is the great source of their power and their wealth, and the main security for their peculiar institutions. It is that which gives us our energy and enterprise under a hot climate, and enables us to command the respect of foreign powers. The Egyptian laves in the Nile, and worships it, as the source of his wealth and support. The Hindoo bows with superstitious reverence before the Lotus, under an idea that Vishnu created Bramah from its unfolded flower. And let us teach our children to hold the cotton plant in one hand, and a sword in the other, ever ready to defend it as the source of commercial power abroad, and through that, of *independence at home.*

The great difficulty is among ourselves. It is not over-production, or foreign competition, we have to dread, but the denial of equal r in the Union, that endangers us. It is the a tion of the right to fetter and restrict us absolu ly forever within our present boundaries, that are called upon to resist. The insulting ass tion that the cotton growing States are not enough to share with the free and pious N the benefits and rights of the Confede outrage and stigma, and if we *bear it* i shall cover our children with deep degra



ARMY BIRD.—The Sparta Journal, p in Sparta, Illinois, says, north of us, the Bird has destroyed entire fields. These birds, like the army worm, travel in immense numbers, and destroy the wheat as they go. In our own neighborhood, we notice many acres, which apparently would not pay the farmer for reaping.

From the Farm and Garden.

Cultivation and Preparation of Sumac.

PALERMO, May 30, 1850.

Dear Sir: In reply to your letter of yesterday's date, on the subject of the mode of cultivation of Sumac in Sicily, I beg to submit the following remarks:

Sumac is an article of commerce of great importance to the Sicilians, as it is also with the Americans. And it is my opinion that this article, so valuable for manufacturing purposes, for tanning, &c., can be produced in the U. States in sufficient quantity to supply the world, if the mode of its culture be understood and proper attention paid to it. I have no doubt that it is the same kind that grows in the United States, which there runs to the size of trees. In Sicily they plant the roots or small plants from two to three feet apart, but always in regular rows, as we do Indian corn; hills about three feet apart, rows about four, so that the plow or harrow can save the hand labor of the hoe. They hoe it two or three times before the rains, finish in May, and gather it in July and August. The leaves are the only parts made use of. After being separated from the twigs by threshing, (or in this country both ways—by threshing and by treading off with oxen or horses,) the leaves are then ground to the state of fineness in which you see it in the United States, being passed through sieves or [illegible] cloths of sufficient fineness, and put into [illegible] 100 and 60 pounds each.

The proper season for planting the roots or plants is in November, December and January.—When the season is rainy, the plants take root [illegible]r. The root or stump is cut off from four to six inches above ground. The scions or sprouts [illegible]p four to six out of each root; and when [illegible], which in this island is in July or August, they are all cut off at the stump, and laid [illegible] handfulls (not spread out much, as the sun [illegible]urn the leaves yellow) to dry—say for a day [illegible]o—great care being taken that no rain falls on them. Perhaps in this country it may answer to plant nearer together than would be advisable in America, on account of the greater heat of the sun here, and thus shade the ground better.

The leaves are ground in mills mostly by horse power; but water or steam power would be much cheaper and better. The perpendicular running stones weigh nearly 3,000 pounds; they run double or single around an upright shaft. The nether or foundation stone is heavier and one-third greater in diameter than the running stones.—The grinding surface of these latter is slightly rough, being occasionally touched with the pick or cold chisel. Hard granite stone answers; here they use a volcanic stone, which is as hard as marble. There follows round the running stones a little piece of wood, that keeps the leaves always under the stones. When ground fine enough, it is sifted or bolted in a large tight room, with a door to enter and fill the bags. In Sicily the article is more or less adulterated with spurious stuff, such as other kinds of leaves, and an article called *brucca*, which resembles the juniper bush in New England; this has no value in itself.

I believe the first year they do not cut off the sprouts. In the second and following years a curious freak of nature produces a single plant a foot or so distant from the original root; and this little plant it is which they usually make use of to transplant. Now the plow or harrow would prevent these from growing, as they would be in the track: and this may be the reason why they hoe it. Still I think the plow or harrow must be used in our country, and some way or other contrived to save these little plants, if wanted. I would recommend you to let me engage to begin with this mode of cultivating sumac. Let one or two young Sicilian farmers be hired to go to Virginia for two or three years, who understand the cultivation not only of sumac, but also of lemons, oranges, grapes, and olives, as well as other productions of Sicily. Their wages in Sicily are from twenty-five to thirty-three cents per day, and find themselves; it should perhaps be half a dollar a day in the United States. Their passage to the United States would be about $25, or a little over; or perhaps our Government would deem it of importance enough to give them a passage either in a merchant or a United States vessel. They should take with them all kinds of Sicilian wheat and other grains, and sumac plants. I can always obtain in the proper season—say December and January—20,000 if required; cost, a trifle. If the lemon and orange trees of this place were [illegible]

duced—say into Florida—they would stand the cold much better than those already introduced from Cuba, which are not of a hardy kind. I can obtain all that may be wanted for an introduction, and Sicilians to cultivate the trees. The exports of sumac to the United States last year were 65,000 bags. Lemons and oranges, 350,000 boxes from Sicily; more than three-fourths from this port. Such is the trade in these articles alone, besides large quantities of other productions. If I can serve you or my country in any way beneficially, it will give me great pleasure to do so.

The soil of Sicily generally is a limestone formation—a reddish soil, which I think corresponds with the land in Maryland, Virginia, North and South Carolina, and the States west of those named. In Sicily, sumac is cultivated in the valleys or level grounds, or on the sides of the mountains; it requires no rain for two months before harvesting it. The soil of Sicily is so fertile that I do not think they manure the ground at all for sumac.

We suppose that the reason of the superiority of Sicilian sumac over that of other countries, lies in the mode of cultivating it. All the leaves are the productions of the young sprouts that spring up from the stump every year. Being so young, the leaves are full of life when cut, and have not decayed, like those of old trees. This, with a dry climate in the latter part of the season, and the soil suiting the plant, gives it the reputation it has all over Europe and America.

I am, dear sir, your obedient servant,

JOHN M. MAYTON.

W. D. PORTER, Esq., U. S. N., Washington.

WE have often heard ladies express a desire to know by what process the fine gloss observable on new linen, shirt bosoms, etc., is produced and in order to gratify them, we subjoin the following recipe for making Gum Arabic starch: Take two ounces of fine white Gum Arabic powder, put it into a pitcher, and on it a pint or more boiling water, (according to the degree of stiffness you desire,) and then having covered it, let it set all night. In the morning pour it carefully from the dregs into a clean bottle; cork it for use. A table spoonful of gum water, stirred into a pint of starch that has been made in the usual manner, will give to lawns (either white or printed) a look of newness, when nothing else can restore them after washing. It is also good (much diluted) for white muslin and bobinet.

From the Patent Office Report for 1846.

The Mineral Manure Theory.

ANALYTICAL LABORATORY, YALE COLLEGE,
New Hevven, Connecticut, Oct. 24, 1851.

EDITORS CULTIVATOR.—The subject which I have placed at the head of this letter is not one which can be fully discussed in a single page of your journal; and yet it is one of so much importance, that I desire to make a few explanations and statements regarding the shape which it has now assumed among scientific men. When I mention the "mineral manure theory," I speak of that view of manures which ascribes all, or nearly all, of their efficacy to their mineral constituents. The principal supporter, and, indeed, the originator, of the theory, is Professor Liebig. This distinguished chemist, distinguished no less by his clear and lucid style than by his high scientific reputation, was for a time devoted to the "ammonia theory," excluding those mineral manures to which he attaches so much importance. A few years since, however, he saw cause to change his ground, and has since held that, if we furnish manures in abundance, plants will, without doubt, always obtain their ammonia, or rather nitrogen, from the atmosphere of the soil.

In persuance of this idea, he went so far as to compound, after a carful study of ash analyses, specific mineral manures for wheat, rye, oats, turnips, &c., which were to take effect upon all soils in a proper physical condition. The failure of these specific manures, which were patented in England, was, as many of your readers doubtless are aware, very decisive. I had supposed the subject rather at rest, but find that, in the last edition of Professor Liebig's "Letters on Chemistry," published so late as the commencement of the present year, he reiterates his former views on this subject in a most decisive manner, and prophesies that our future agriculture will depend upon them, however much we may distrust and disbelieve them now. I have also had occasion to observe quite recently that some gentlemen of high standing among our scientific men follow

Liebig in this as well as in other theories. For these reasons I have thought it best to express my own opinions on this contested point, in order that our farmers may be aware that all chemists do not hold to views which militate almost directly against the ordinary results of practice.

My belief was that, when Professor Liebig advocated the "ammonia theory," he was nearer right than he is now, when he only admits the necessity of mineral manure; not that he was right then, but that better results would, in most cases, be obtained by the farmer in the use of ammoniacal or nitrogenous manures alone than by the use of mineral manures alone. We find land in all parts of the country where strictly mineral applications, such as lime, plaster, marl, &c., fail to produce any marked effect; but if upon any of our fields we apply guano, or sulphate, or carbonate of ammonia, the character of the vegetation is at once changed, its luxuriance and vigor increase, and in a great majority of cases the product is augmented. Every farmer who has observed matters intelligently knows that the above statements are correct; indeed, they have been so far applied in practice, that the quantity of ammonia which any manure contains is taken as the highest standard of its value. A guano, for instance, with the usual per centage of ammonia, will bring twice as much as one which contains little ammonia, even though this deficiency is replaced by the most valuable possible mineral constituents. I must not be understood to say that mineral manures are not valuable; on the contrary, I have the highest opinion of them, and recommend their application in almost all cases where my advice is asked. The mineral constituents of the plant are no less indispensible, than its organic part, and if one or two of them are absent from the soil, the plant will not flourish. There are many instances of these special deficiencies, which special mineral manures alone will supply, and there are certain mineral substances which have been found specially valuable. The most valuable of all these is phosphoric acid. Now, the *phosphates*—that is, the compounds of this acid—are not more necessary to the plant than are the *alkalies*, but the supply is far more apt to be scanty, and this—not its intrinsic importance to the plant—is the cause of its higher value to the farmer. The principle applies when we say that nitrogenous manures, of which ammonia is the most common form, are more valuable than others known in agriculture. They are volatile, easily decomposable, and very soluble; for all of these reasons, they are extremely apt to disappear most rapidly. These manures, then, are worth more to the farmer than any others, because they are most likely to be needed, and because their scarcity renders it somewhat difficult to obtain a good supply.

I make these statements fearlessly and confidently, although against so high an authority as Liebeg. I should not presume to differ from him on mere theoretical grounds, but feel that I am here sustained by almost uniform practical results. It must be acknowledged that we have occasional instances reported of plants grown upon soils nearly or quite destitute of vegetable matter; but in most of these that have fallen under my observation, the fact of the *entire absence* of vegetable, and particularly of nitrogenous matter, has not been sufficiently established. The information that they give is neither entirely definite, nor well enough made out, by continuous and careful experiments, to be set off against an array of facts brought forward in favor of the opposite view. Single experiments, for a single year, must always be looked upon with distrust until amply verified; and it is by mainly trusting to such, so far as we are informed, that the exclusive mineral theory has been built up. The laboratory alone is pretty sure to go wrong when it attempts to prescribe rules of practice. The chemist must go into the field and study actual experience if he would serve the farmer effectually. It has been my intention to experiment somewhat largely upon this particular subject; but in the last number of the Journal of the Royal Agricultural Society of England is a paper of Messrs. Lawes and Gilbert, that almost precludes the necessity of doing anything more. These gentlemen have been experimenting on a large scale for the last ten years, and their results are clearly and admirably set forth. They took a field at the close of a four years' rotation, when the manures added at at the commencement of the course were exhausted. On this ground they have cultivated wheat for ten years under various conditions. One plot

remained unmanured, and the produce of this served as a standard and a starting point for comparison during the whole period. Thus, if its yield in 1845 was seventeen bushels per acre, the improvement over this in an adjoining plot, otherwise the same, was set down to the advantage of whatever manure had been employed. Such a system of cropping, continued for so long a time, obviously affords results that are worthy of much confidence. The first year's comparative practice was made with various approved mineral manures alone. It was found that, even by the addition of large quantities of these, the increase of product over the unmanured plot was but trifling. In the next year the same character of mineral manures were employed, but with the addition in several cases of ammoniacal or nitrogenous substances. In all of these the effect was quite marked, the yield increasing to ten, twelve, and fourteen bushels, above the unmanured plot. This, in short, was the character of all the results; sometime ammoniacal manures alone were added, and then the increase was several times more than by mineral manures alone. One experiment was very striking: four hundred weight per acre of Liebig's special mineral manure, for wheat, was applied to a plot, and produced an increase of but about two or three bushels upon this same plot in the next year. A purely ammoniacal manure gave an increase of ten or twelve bushels. To make the experiment still more conclusive, no manure was added to this plot for the next crop, and the yield then fell again almost to the original standard.

These trials seem to me perfectly conclusive in this matter, so far as wheat is concerned; they prove that ammonical manures increase its growth far more than mineral manures, where both are already present in moderate supply, and that the addition of any amount of the latter will do little good unless the former be also present. These views are still further sustained by a very able paper in one of the late French scientific journals. The experiments in this case were made upon oats, and were between forty and fifty in number. They commenced by growing them out in sand, first deprived of every thing soluble by acid, and then burned to draw off all vegetable matter. In this, as might have been expected, no perfect plants were produced. One mineral substance after another was added, until at last it was found that, with a certain *series* of them, the plant flourished better than with any others. It, however, was still far from luxuriant, or from yielding a fair amount of grain. It was not until some manures containing nitrogen had also been added that entirely heathly, fertile, and strong plants were obtained. These experiments appear to have been very carefully conducted, and furnish important confirmation to those of Messrs. Lawes and Gilbert.

There are other questions involved in these experiments, which for want of space cannot be discussed here. The main point is, I think, fully established. The farmer may supply special deficiencies by special mineral manures, and should aim to keep up the supply of mineral substances in the soil; but he cannot render it fertile, and continue it so, with them alone; he must also supply nitrogen in some form, and will find it in a great majority of cases the most important and efficacious of all fertilizers. In despite of *theoretical* views to the contrary, he will find that, in *practice*, he can best afford to give a high price for those manures—that, especially, rich in ammonia or some other compound of nitrogen.

Yours, very, truly,

JOHN P. NORTON,

Albany Cultivator.

From the Southern Cultivator.

Planting and Cultivating Cotton.

MESSRS EDITORS: A friend called on me to give him my plan, or mode of making cotton, and I now do so, without giving my address, as he will understand from whence this article comes when he reads it.

I propose to be short. In the first place, I recommend you to *make* all the manure you possibly can, by building stock lots and hauling them, from the forest, cornfield, and thrasher, the litter you can, and spread it entirely over them—on which, never fail to pen your stock every night. In this way you can make as much manure of the first quality, as you can haul out. As early in January as you can, commence hauling your manure, and deposit it in piles, thick enough so as to be certain to have *every row* manured alike. As soon as you get as much on one field

as you want, commence laying off your cotton row with a scooter plow, and put your manure in the furrow about three inches deep, on which throw your beds with a one horse turning plow, or common shovel and mold-board; the latter I prefer, especially in land that was in cotton the previous year, as you can plow up the cotton stalks more easily with them than any other plow I have tried. This should be done in January or February, so as to give your beds time to settle before planting, which will prevent the tearing down of your beds in opening, and covering your cotton, besides other advantages unnecessary to mention here. The 10th of April commence opening your beds, with an opener made of a block of wood, twenty inches long, triangular, with a *small, short* scooter plow in front, with beam and handle; never open your beds deeper than two inches. I should have mentioned that a side harrow should precede the opener, to clean the bed of trash and clods.

Roll your seed in ashes, lime or plaster, and strow them *very regular*, at the rate of half a bushel per acre, and cover them *shallow* with a block or coverer made of a piece of wood, twenty-four by sixteen inches, hollowed out in front one inch, with beam and handles.

As soon as there is enough cotton up for a stand, commence running around it with the "Mississippi Scraper," which will leave the bed in the shape of the roof of a house, with the cotton standing on the ridge, (as it were) about one inch wide, ready for the hoe, which follows, chopping *lightly* through, leaving from one to three stalks in a place. After you have gone over all your cotton in this way, turn on it with all hands, with the hoe, and put it to a stand as soon as possible. After which, as soon as possible, run around it with side harrows.—The balance of the cultivation to be done *shallow*, [illegible]weep and harrow.

[illegible]ve now given my friend and his neighbors [illegible]an of managing a cotton crop. And I avow most emphatically, that if he will manage as I have directed, he will never fail to make as much cotton as any of his neighbors, other things being equal.

The above plan is not altogether original with me. I have been managing a cotton crop but about six years, in the capacity of an overseer, during which time I have studied agriculture as a physician studies medicine. After reading all the agricultural works I could get, among which the *Southern Cultivator* stands pre-eminent, and writing private letters to the best and most successful cotton growers of the South, together with my experience, I have fallen on the above plan, as the best I have tried, or seen tried.

Yours, &c.

AN OVERSEER.

Cedartown, Ga., Feb. 1853.

From the Soil of the South.

Premium Essay on Hill-Side Ditching.

Read before the Second Annual Fair of the Georgia and Alabama Agricultural Society.

BY NELSON CLAYTON.

IN performing this indispensable work for the preservation and improvement of land, there is a great diversity of opinion as to the best manner in which it is to be done—differing, too, as to the most essential points. But this difference is the result, in a great degree, of the diversity and irregularity of our hills, knobs and valleys, as well as of the nature of the *soil*. If all our land requiring hill-side ditches were a perfect inclined plain, with the same grade from top to bottom, perhaps this difference would not exist—or if it did, it would be much easier to ascertain and correct the errors, and establish something like a uniform system. Under the many disadvantages by which the work is surrounded, all that can be done is to lay down some general rules, leaving the balance to the experience and practical sense of the operator. "In a multitude of counsel there is safety." I will therefore give here the result of several years' experience and close observation, prefacing it with the hope it may be found of some little service to some one desirous of information upon the subject—not claiming for my essay anything on account of *literary* merit.

The frame with which I work is made of two pieces of plank nine feet long, three and a half inches wide, three quarters of an inch thick.—Fasten the upper ends of the planks together in the form of a compass, or rafter, placing the lower ends fifteen feet apart. Four feet nine inches from the lower ends of each piece (this can be varied, however, to suit the height of the person

who is to carry the frame) attach two small slips of plank (one and a half inch by five-eighths) upon opposite sides across them, which are to act as a support for the water or spirit level, as well as to fasten the two arms of the compass or frame together and make them steady. It will also be better to fasten these two narrow strips together in two or three places to make them more firm.—On the middle of these two narrow strips is fastened the level. There can be no doubt of its superiority over the plumb-line, on account of its requiring less time to use it, particularly on a wintry day. The frame can now be taken to some place that is perfectly level, and by reversing the ends, ascertain that it is right. If it is not perfectly level, it can be made so by moving one end of the cross slat up or down. After this is done, mark on the level the exact point at which the vacuum stands—then elevate one end of the frame one, two, three and four inches, and mark upon the level each time as at first. Now get at least one hundred small canes or sticks about eighteen inches long. You will have some one (a small boy will do) to carry the sticks.—He should walk on the opposite side of the frame and place one in the ground a few inches back of the foot of the frame, upon the same side that he is on, so that in moving the frame for another stride, you can place the back end or foot exactly where the front one stood.

The fall or grade to be given to the ditch depends upon the length—whether it is straight or crooked—the quality of the soil, and to some extent the grade of the hill. I will give, for instance, the grade to be used upon gray land, having a light sandy or gravelly clay foundation, as it is much the most difficult. If the ditch is to be two or three hundred yards long, nearly straight, with only long and gentle curves, the first stride of fifteen feet, at the upper end, should have four inches fall—the next three—and then the first hundred yards should have two and a half inches fall to every fifteen feet, the second two, and the third hundred yards should have only one and a half inches fall to the fifteen feet. The velocity gained by water in running any distance, makes it necessary that the grade or fall should be diminished about this proportion to the length of the ditch. If, however, the ditch should be very crooked, add a half inch, and in extreme cases even more than that to the rate of fall. At very short crooks for the first stride below, add as much as a half inch, for the purpose of carrying off the sand that would otherwise accumulate at such places. If the ditch should be perfectly or nearly straight as much as one hundred yards, the fall might be the same as the rate given above for straight ditches. Upon steep hill-sides the ditches require more fall than where they are only moderate. This is necessary to prevent them from filling up, on account of the force with which the water and sand come into them; for let your ditches be ever so close together, in very hard rains there will be some sand washed in from above. I have some short ditches on very steep hill-sides, as much as from three to five inches.

These grades, or this work, to the inexperienced, may appear complicated, but not so with the experienced. It takes but little practice, accompanied with good judgment, for any one, by looking at the land, to tell whether the ditch will be straight or crooked, long or short; and if he should sometimes be mistaken, it is better to run it off again than suffer it to remain wrong—for to make the fall greater or less is a very easy matter when your level is marked as before directed.

The only difference between the grading or fall, given the ditch in red stiff land, or where there is a good clay foundation, and the above, is that the fall may be made greater, for the reason it is less liable to wash.

In commencing to ditch, you will first take a general view of the land. Perhaps from some local cause there is some *particular* place where a ditch should be—or some starting point (either above or below) where, above all others, there should be a ditch. (I neglected to say before, you can go up hill in running your ditch, as down, by simply reversing the ends frame.) If you can get an outlet by ru your ditches with a branch or bottom, it is preferable, as the best land will thereby be saved. But if this cannot be done, as very frequently happens, you will have to use the branch or bottom for an outlet. There must always be a ditch near the top of the hill. If this cannot be done in any other way, the grade must be changed or reversed, so as to make the ditches enter into each other

until a suitable outlet is secured. In this case there must be a log eight or ten feet long placed upon the lower side of the ditch you run into, at the point of junction, to prevent the water from breaking over. The ditch should also be wider from that point down.

When you have an outlet in opposite directions for a ditch that is as much as two hundred yards long, you should reverse the grade about midway, so that the water will run in different directions.

It is best to have no ditch exceeding three hundred yards long, running in the same direction.—You can most always divide the ditch between two outlets where the distance is so great as that.

The distance the ditches should be apart is owing altogether to the land—its quality and the grade of the hill. I have some of my ditches as close as thirty feet to each other. The usual distance is about twenty to forty yards on hilly land—red stiff land will bear even more than that.—The only general rule that can be laid down on this point, however, is *be sure to have them close enough together to prevent washing.* When you have finished staking off a ditch with the small sticks, as above directed, you should then go back and alter them where the crook is too abrupt, and then remedy it by cutting the ditch deeper or more shallow at that point. You will find many places can be done in this manner on account of the general unevenness of the surface.

When this is done, have a furrow run with a plow six or eight inches from the stakes on either side. The furrow is run a little distance from the stakes, so as to prevent the horse from stepping on them. Another furrow is then run upon the other side of them, making the space between fifteen inches at the upper end, about three feet at the lower end, (the ditch three hundred yards long.) Now plow out the middle and have the dirt pulled out with hoes on the lower side, until the ditch is six or eight inches deep. It will be necessary to plow it out two or three times, first [redacted] scooter and then with a shovel, so as to [redacted] concave when finished, or you can use any kind of plows you wish. After this is done, by stooping down low in the ditch you can see the rough points or lumps that will need trimming.—I think ditches should be as shallow as possible to answer the purpose for which they are designed, so that horses and mules will step across them more readily, and the dirt will not be so apt to fall from the edges. The ditch should be wide, for the reason the water being spread over a greater surface is less liable to wash it into a gully than if confined in a narrow space. Even when a ditch is well laid off, if it is made too narrow it may fail altogether. If at any time you discover that a ditch is too narrow, alter immediately—if too wide, (though this is rarely the case) let the grass grow into it on the upper side, and in one year it will get narrow enough.

At all gullies and washes across which you wish to carry your ditch, put a log upon the upper side as well as the lower side of the ditch, as long as the wash is wide, the size of the log to be in proportion to the depth of the gully. The ends of the log on the upper side must be placed in the earth even with the surface. If logs are placed carefully in this manner in several places between the ditches, the gully will soon fill up. Pine brush, if convenient, will also be used to advantage for this purpose.

Stubble land is much the easiest ditched, because the surface of the earth is more smooth, and if done in summer immediately after the grain is cut so that grass will grow on the embankment, it is not so liable to wash.

The largest gullies may be stopped in this manner: First, run off your ditch without any regard to the gully, and at the place where it crosses, dig out two places on each side of the bank of the gully, opposite each other, above and below where the ditch is to cross, and as deep as the gully.—Cut logs long enough to reach across the gully, and fit them in the places dug out in the sides; then put them in at each place, one upon the top of the other, until they are as high as the bank of the ditch should be to prevent its running into the gully—then fill up the space between as high as the bottom of the ditch with dirt, carefully stopping the cracks between the logs with straw. Put in a single set of logs every twenty or thirty feet across the gully between ditches, in the same manner, then fill up with logs, brush, or anything that is convenient, and the work is done.

I have filled up and am now cultivating across gullies in this manner—one in particular that was

from five to seven feet wide, and equally deep, about one hundred yards long.

Lay off the rows for cultivation on a level.—Plant corn, as well as cotton, in drills. Lay off *guide* rows about thirty to fifty feet apart on ordinary hill-sides; but as they will not run parallel upon a level, some places will be much wider than others. In the middle of these wide places run another row upon a level, then commence laying off your rows for planting parallel with the first rows, above and below alternately, until they meet in the narrow places—then run upon each side of the *guide* row in the middle until you have finished. The very short rows (they will sometimes occur) may be laid off by guess.

To preserve these *guide* rows when grain is sown, I make the best hand that laid off, go ahead and run them over. This he can do, very nearly, by counting the rows at the narrow and wide points. Then take a turning plow and run a furrow upon each side of it, making a ridge. This will enable you to identify it the next year.

Every time in plowing over the field, I make some of the plow hands clean the loose dirt out of the ditches, at "twelve o'clock," while the horses are eating. I know there is great diversity of opinion as to how land should be cultivated after it is ditched. Many reasons are given for plans differing from that here laid down.

Some contend that the rows should be laid off so that each one will carry off its own surplus water. Now, if each row is to carry off its own surplus water, why have ditches at all? My argument for having the rows upon a level is, when there is too great an accumulation of water to be retained in the middle of the rows, let it come over all the way in one smooth sheet, and before it collects in a body sufficient to wash, run into a ditch.

The great error in all that I have seen written on this subject is, that there was no difference made for the fall of straight or crooked, long or short, very steep or gentle hill-side ditches.

I will here close this subject, that might fill a volume, and still be productive of no good—still fail to convince others, as others have failed to convince me. I have tried many plans, adopting in the outset the motto, "Try all, and hold fast that which is good."

If I have made myself understood in the foregoing pages, I am satisfied; and in conclusion, in behalf of the plan here recommended, will only claim of others a *fair trial.*

From De Bow's Review.

Cotton Insects.

I have read with attention Dr. Gorham's essay on the cotton worm. It might be considered presumptuous in me to dispute any of his statements, from his superior scientific knowledge; but my having been a practical cotton planter for the last fifty years, and one not totally devoid of observation, I hope will be an excuse with you, with him, and with the public, for correcting a few errors that he has fallen into.

We had the worms in great abundance last year, and *consequently* the doctor thinks we shall have none this year, or if any, not before cotton leaves have attained their full maturity, ("greatest maturity" are his words,) and then goes on to confute some erroneous writings on the subject. Now, like the yellow fever, they would be more likely to return, if no occurrence happened, if no remedy was applied, or means taken to avert both the one and the other. The same local causes which induced the yellow fever one year, would continue to induce it the next year, if not removed or rendered innoxious by some means, either natural or artificial. So would the chenille (the distinctive name of the caterpillar under consideration.) I agree with the doctor that we are not likely to suffer by them this year, but from very different causes to those he mentions. It is to the *ants* that we are indebted for making any cotton in this country; they are the great enemies to the chenille as well as other insects. The assistance from the ichneumon is very feeble. Whenever the chenille or other caterpillars appear in large numbers, the ants increase in ratio, from the quantity of food afforded them by these insects. On the first year's appearance of the worms, the ants are thin, but few in number; but the [redacted] year they are very numerous, and con[redacted] *army* too strong for the doctor's *army* [redacted] These insects always begin their depredations in small numbers, and when they are not checked or destroyed, go through their different metamorphoses in twenty-eight days or one lunar month,

each fly or moth depositing eggs, which produce fifteen hundred to two thousand worms, as was completely verified and proved in my presence, about fifty years ago, by an intimate friend of of mine. The doctor is wrong in his statement, that 1820 was the first year of the appearance of this insect in Louisiana. I came to the parish of Iberville in 1806, and the cotton fields had been laid waste by them a year or two before. What forcibly impresses this upon my mind is that the inhabitants had applied to their priest, Father St. Pierre, for holy water to drive them away; and I must add, in justice to Mr. St. Pierre, that he told them it would have no effect, but gave them the holy water at their earnest request.

Dr. Gorham thinks we receive the stock from Mexico or South America. If this were the case, it must be in the moth or fly state that the chrysalis is fixed and immovable, and, according to his own showing, the army are easily arrested in their progress, and never reach any existence; the fly, too, it has been noted by hundreds of persons, can only keep on its wing for a few yards, but must alight and rest; a much smaller stream than the Mississippi would stop their progress, and drown them all; they are doubtless indigenous. As to how the stock is preserved through the winter, and for years, I believe no one knows. Their appearance is equally as irregular in the West Indies as here, and from what I have seen of them in the Bahamas, they are much more at home here. On clear, hot days there, they can only feed at night, or early in the morning, or late in the afternoon; I have seen them drop dead from the leaves there, when they have remained too long on bushes, from the heat of the sun; and have also seen them killed there in immense numbers by the little cold, caused by a north or north-west wind in October or November; here I have seen them feed all day in July and August, with the thermometer five to ten degrees higher, and I have seen them also feeding on leaves covered with frost—*the identical same striped caterpillar.* These worms first made their appearance in the French West India Islands; the inhabitants called them chenille, and hence the general name for this peculiar worm. In 1814, or thereabouts, the chenille made their appearance in great numbers early in June, in Iberville, and eat our cotton close down to the ground. Cotton was then planted in April, and the main stems were so tender, that the worms ate them up. The doctor is mistaken in saying that these worms feed upon cotton bushes alone, for this very year they fed first upon the young tender crab grass, and ate the whole of it up before they attacked the cotton, and in the West Indies they feed promiscuously upon the leaves of a plant there called the salve bush; this plant grows about the height, and the leaves are a good deal like the mullein of this country, having a whitish color, and thick, soft velvety feeling.

Can the doctor tell us how it happens that the tobacco worm finds out every plant of tobacco, scattered in nooks and corners, far from tobacco plantations, and on the first year of planting it? Is it not possible that the same species of worm feeding on different plants may change its appearance?

In the year above mentioned, the chenille made their appearance simultaneously in Iberville, and adjacent parishes, and at Colonel Thomas' on the Bayon Barbara, situated ten miles, on a straight line, from any other plantation. As to the means of destroying them, except by their natural enemies, I conceive we have only one or two ways, and these very equivocal. Their propensity to fly into a light at night is known to every one, where they exist in the fly-state. By kindling blazing fires at night, at a proper distance apart, and keeping them burning briskly, from eight to ten o'clock at night, immense numbers are destroyed (This is their principal time for flying about, and they will travel about three acres to a fire.) The fly ought to be watched, and as soon as they leave the chrysalis, and before they deposit their eggs, these fires ought to commence. I have known some good result from this, and if the measure had been followed by all the neighboring planters I make no doubt that nearly the whole crop would have been saved. We might do some good by sending all hands into the field and crushing them while in the chrysalis state; but it would be tedious work to destroy them in this way; we could hardly afford the loss of time from other work; fires can be made with much more facility.

From the Memphis Miscellany and Review.

Intelligent Mechanics.

From the means which we have of obtaining correct information upon almost every question, we are fully persuaded that we have comparatively few intelligent mechanics in our country in proportion to the amount of numbers and their own population. This should not be, for the means are abundant whereby they can obtain information to make them respected for every mental qualification. The desire, however, must exist in the mind, and it is for the want of this desire—this mental quality—to read good works and study good authors, that so much ignorance abounds. Instead of reading useful periodicals and books, the great majority of them are delighted with the flashy stories and flippant literature of authors whose names and fame will never reach above nor beyond the very garbage of bookdom.

We know it is not easy to find a person who has toiled as a hard-working mechanic in possession of any great amount of means, and this very fact should teach them how much it would be for their own benefit to employ their leisure hours in acquiring useful information, and obtaining such a mastery of their trade as to be able to conduct the same, and thus be ready to ascend the higher situations whenever opportunities are presented. We have frequent applications for practical intelligent mechanics who can superintend a business, and we know from experience how difficult it is to obtain them. Every man who works at a trade, no matter what that trade is, should take sufficient pains to learn it so thoroughly as to be competent to conduct the same in all its branches. Every mechanic should strive to be master of his business. There is philosophy in every trade, and why should not carpenters, tailors, machinists, dyers, mill-wrights, coopers, &c., be as intelligent as doctors, lawyers and merchants? There is no use, as many mechanics do, of complaining about the aristocracy of this and that class; it is worse than foolishness; the aristocracy of mind is higher than that of wealth, and always commands respect. A gentleman writing to us some time ago, for a machinist to superintend his foundry and machine shop, said he would give him above $2000 per annum, but he would be willing to give more could he get the proper person. "I want a good mechanic," was his language, "and a gentleman, one who is courteous, intelligent, and with whom I can associate with as a friend." The elevation of our workingmen is an object about which we are solicitous; we have often preached about it through these columns, and will continue to do so upon every proper occasion. It has been our object to present a chaste literature along with scientific and other useful information, but our circulation is only among the most intelligent of our mechanics, consequently the great mass, for whom our remarks of this kind are designed, will not see them. We will, however, thank those who do read them to talk upon the subject from time to time with their brother craftsmen, in order that they may feel the force of the old adage, "knowledge is power," and many may be led to see the error of their ways, and adopt a course of life which will lead them to ascend to the front ranks of Intelligent Mechanics.

A GREAT YIELD.—George Walker of Susquehannah county. Pa., took a premium of $50 at a recent Fair for the largest yield of corn, having raised 160 bushels of shelled corn to the acre, which is said to be the greatest yield ever known. It was on a five acre lot, which, in addition to the 800 bushels of corn, produced 20 tons of superior pumpkins. It was on one of the highest hills in the county, being an oak, pine, beach and maple ridge; soil, sandy loam. The following is the mode of cultivation:

He plowed five acres of green sward for corn the begining of May, and hauled on the same, one hundred loads of manure. The manure was spread, the ground was well harrowed, and planted the last of May, in rows three and a half feet apart, running east and west, and from three to five grains in the hill. Two bushels of lime, mixed with three bushels of plaster, were applied to said five acres immediately after it came up. A plow did not enter the field after the corn was planted. The grounnd was kept loose and mellow and the grass and weeds subdued by the use of the hand hoe. A specimen of corn was exhibited at the State Fair, at Lancaster, in October, being of the white flint species, eight rowed, small cob, and long ears, more than a foot in length.



American Cotton Planter.

MONTGOMERY, ALA., AUGUST, 1853.

N. B. CLOUD, M. D., EDITOR.

Our Agents.

WM. STRICKLAND, Book-seller, No. 28, Dauphin street; BOULLEMET'S LITERARY DEPOT—corner of Royal and Dauphin street; H. H. CARVER & Co., Battle House Book Store, Mobile; from any of whom the back numbers may be had.

A. P. PFISTER, Exchange Corner; C. R. HANSFORD, Market street, Montgomery.

With *The American Cotton Planter*, our agricultural friends will find all the new and valuable publications of the day, either literary or agricultural, at the above-named Book Stores.

Mr. AMOS TRAVIS is our agent at Gainesville, Sumter county.

Mr. N. PLUMB, Sparta, Conecuh county.
E. B. Fox, Sandy Ford, Fla.
Capt. J. JACK, Havana, Greene county.
WM. G. BREWER, Tuskegee.
H. C. BISSELL, Carlowville.
Dr. WM. CUNNINGHAM, Burnt Corn.
Dr. J. F. DORTCH, Camden, Ala.
E. J. CAPELL, Esq., Rose Hill.
ISAAC PARKS, Oak Bowery.
Dr. BATT PETERSON, Clayton.
JAS. MONTGOMERY, Fife, Ala.
N. A. MCMILLAN, Canton.
Dr. J. E. POELLNITZ, Montpelier.
G. M. REYNOLDS Mr. TURNIR, Mr. B. M. CLARK, and Mr. M. P. DOUTHIT are our traveling agents.

Work for the Month.

Up to this time we have not attempted any memoranda under this head. We have not omitted this important feature because we think lightly of such media of information, but we have been unwilling to attempt it until we shall have so arranged every thing connected with the Cotton Planter, as to enable us to get it out promptly and into the hands of our subscribers by the first day of each month, when such memoranda may prove acceptable to our readers, and may be acted upon in proper time, if desired.

The early part of this month will complete all work in the cultivation of Cotton, which should be done invariably by very shallow sweeping. This month will also complete the gathering of Fodder on all early corn.—Having completed these portions of the farm work, ample time will be allowed for that very important, and in this country too much neglected, Turnip crop. This crop will be found, when the proper attention is given it, to contribute very materially toward supplying the deficit in the Corn crop, occasioned by the drought. The Turnip is one of our most valuable esculents. It affords very good food for both man and beasts. If the average per acre of Corn, of an ordinary season for the Cotton region, be 20 bushels, I am sure that 5 acres of Turnips may be easily made to supply the failure in the Corn crop of 100 acres. It is an easy matter to prepare land in such manner as to secure a crop of 1000 bushels of Turnips, and we are also sure, from practical experience on our farm for the last several years, that double that amount may be grown per acre. The preparation of the land is almost the only work necessary to grow a crop of Turnips; one slight hoeing and running through with a sweep completes the work altogether.

It is astonishing what an humble opinion too many of our planters entertain of the value of this crop; and also, of the quantity that may be grown upon an acre of land; but when we come to examine into the subject, we shall find that these planters rely entirely for their Turnip crop upon a small bit or patch of land, to be *tread* through the summer by a part of a half fed stock of cattle that may, or not, get into the cow pen, according to the will of the milk-woman, while the balance tread the road or outside of the pen.

Turnips, like corn or cotton, or garden vegetables, will grow and make something with any kind of attention that may be called work; but if you would have a fine crop of Turnips, you must prepare the land in time, and manure it well and harrow it, then lay your rows thirty inches apart, and having prepared yourself with *good seed*—and if you have not raised them, you can get them of S. Hutchings & Co., of Montgomery, or Jos. Tucker, of Mobile—by the 20th day of August sow them.—We always sow for one main crop on the 20th August, unless it be Sunday. The Ruta Baga, and other smooth leaved varieties of the Turnip, may be sowed earlier—as early, indeed, as the 20th July. They will then require more work, and do but little better. All the rough leaved varieties are apt to be injured by the fly if sown so early. It is always better to sow Turnips in the drill, than to sow them broadcast. They are sure to be sown too thick either way, and it is much easier and more certain to have the stand regulated when in the drill.

During this month the stock lots should be well littered with leaves and other decaying vegetable matter from the forest. This important business should be promptly attended to now, as there will be but little time to spare after cotton picking commences.

Cotton picking usually commences this month—toward the close of it especially—it is therefore necessary that good baskets should be prepared, and convenient sacks, which facilitate the picking very much. Indeed, everything that will expedite this work, and enable the

planter to save his Cotton in good order, should be attended to this month. The gin house and pick room should be cleansed, the scaffold repaired and fixed, so that as soon as the hands can do a day's work, whether in August or by the first of September, all should be ready to do it, as the sooner it is picked after opening the better.

Our Subscription List.

We ask the individual and special attention of our subscribers and readers to this subject at this time. We do not intend to trouble you with a long lecture of complaints or disappointments. nor do we intend to ask of any of you additional pecuniary aid on your own subscriptions. We do intend, however, to ask a small favor from each subscriber individually, and we ask it because it is small, and because we know well that each one can confer it.

We ask your attention, first, to the character and style of the *Cotton Planter*, in every particular under the control of the Editor. It is gotton up of the very best material the country affords—new type, plain and readable—clean white book paper, and neatly and substantially covered. Thus protected from stain, spot or chaff, it affords an interesting sheet of advertisements. In its select matter, we are sure all will agree, who desire science and practical utility, that it is every thing that could be desired in such a publication. Our original communications are from practical planters, are varied, and are increasing.

We have just perfected an arrangement with a practical and scientific Horticulturalist, who will furnish a regular monthly memoranda of garden and fruit work for our columns, together with a leading article on some subject connected with the garden or orchard, a specimen of which we are proud to present to our readers in this number under our Horticultural head. This arrangement must add greatly to the interest and usefulness of the *American Cotton Planter*. This is what we can do, and we intend that the paper shall under no circumstances fall from this high position.

Then we ask your attention, in the second place, to the mode of sustaining such a publication as it is, and in the progress we intend to make, because we intend to keep fully up with the age in which we live. You all have executed your part of the contract to the letter, and the number of our subscribers fully equals our expectations up to this time, and yet we lack *one thousand names* to sustain the publication to the close of the volume.—We commenced with an edition of 8000 copies each month, and we are able, therefore, to supply back numbers to 1000 subscribers yet That number of names can be easily procured, the circulation of the paper thus extended, and the Editor relieved entirely from any expense, save *time and attention*. Let each subscriber procure and send us an additional name or more when it can so easily be done, and all we ask is accompliahed at once. Will you try, each and all.

Too Late for a Place in this Number of the Cotton Planter.—We have received a copy of the Southern Cultivator extra, containing the "Proceedings of the Executive Committee of the Southern Central Agricultural Society of the State of Georgia, held at Augusta, Georgia, December 18th, 14th, 15th and 16th, 1858, with the premium list for the eighth Annual Fair, to be held in Agusta, Georgia, on the 17th, 18th, 19th and 20th of October, 1858."

This great Society, having become an object of truly meritorious interest, not alone to the public spirited citizens of Georgia, but to the whole South, we shall furnish our readers with the premium list complete in our next number, and such of the proceedings as we may deem of special interest.

Agricultural Association

OF THE SLAVEHOLDING, OR PLANTING STATES.

We hereby acknowledge the receipt of five dollars from Mr. Nelson Clayton, of Chambers county, Ala., his initiation fee as member of the Association. Mr. Clayton manifests the right kind of spirit for carrying out the objects of this Society. "As I approve," he says, "of all that was done, I do not wish its benefits without its burthens."

We hope many others of our public spirited planters, who desire to see the profession of Agriculture occupying its proper position among the pursuits of intelligent men, will see, feel, and act likewise.

We have a letter also from Col. A. G. Sumner, of Pomaria, South Carolina, one of the Executive Council, on matters of interest to the Association.

We have, likewise, a letter from Dr. Wm. C. Daniel, of Decatur, Georgia, on matters of interest to the Association.

N. B. CLOUD,
Sec. Ag. Association of the S. or P. States.

Miner's Domestic Poultry Book.

We have received from the publisher, Geo. W. Fisher of Rochester, N. Y., "Miner's Domestic Poultry Book." This is an entirely new work, and like its author, thoroughly practical. This work is gotten up in fine style, illustrated by one hundred and thirty-five portraits of newly imported and native breeds of fowls. The book is handsomely printed on good paper, 12 mo. size, and contains 256 pages, and sold at the low price of 50 cents in paper, 75 cents in cloth.

This subject is attracting much attention among our farmers and planters, and deservedly so; purchasers will be exposed to deception and cheat without such information as this book will afford. We hope our book merchants will soon have a supply.

Our readers in and about the city can see this specimen at C. R. Hansford's.

It is too late in the day for an argument to be maintained, that facts are to be arrived at by guessing, more readily than by scientific research.

DeBow's Review.

We have received the July number of this very valuable work, published in New Orleans. With this number it commences the 15th volume, old series, or 2d volume, new series. The present is a valuable number, and a fair specimen of the work. It contains a number of ably written and valuable articles on various subjects connected with the industry and prosperity of our country. This work is deservedly ranked among the first publications of the country. It is published in monthly numbers, each number containing about 100 pages. Subscription price, $5.

Cotton,
ITS IMPROVED AND TRUE CULTURE.
No. 3.

Up to this time we have written less on this important subject than perhaps might have been expected of us, from the fact that we have desired that the diversified contents of our paper, select and original, might disabuse the misapprehension that had obtained ascendency in some quarters, to the effect that the the *American Cotton Planter* was to be devoted exclusively to improvements in the culture of Cotton. We think, however, that in the seven numbers which have gone forth we have clearly shown that the *Cotton Planter* is to be the strenuous and uncompromising advocate of diversity of labor and constant improvement in all the varied departments of industry, which our circumstances as cotton planters render it necessary and proper we should encourage and pursue.

In concluding an article under this head in a late number of this paper, we hinted at some of the causes which have rendered cotton growing in this country so destructive to the soil. In doing this, however, we did not presume to locate blame in any quarter. Under all the circumstances, characteristic of the total disregard of agricultural knowledge heretofore in this country, it is not surprising that this destructive practice should have prevailed so universally over the cotton region. All the circumstances which characterise this peculiarly favored country, such as its soft, mild, and uniform climate, its rich and exuberant soil, while equally propitious to a scientific, more economic, and in the end much more profitable practice, have contributed materially to expedite the catastrophe which the pioneer cotton planter commenced, but a half century ago, upon the banks of the Savannah river. This wide-spread ruin, however, has not wrought evil alone; a few facts, invaluable and fixed, have come forth, unscathed and well tested, in the crucible of experience. These facts stand out prominent and glaring to guide and direct us in the great work of reparation. That almost illimitable waste of red hills, denuded and barren, radiating from the Savannah northward and eastward to the extreme limits of the cotton region, and west and south-westward yet extending, have all to be reclaimed by the plastic hand of scientific industry, to bloom again in one unbroken and uninsulated oasis of luxuriance and fertility.

We are aware that most readers, in the investigation of all practical subjects, haste to the formula, impatiently passing over the why and the wherefore. We ask our readers patiently to indulge us in a thorough investigation of these first principles.

Experience, which is the true test of every valuable principle in agricultural industry, has discovered to the observant and reflecting man two positions as indispensable and essentially necessary, upon which to base the foundation of any system of permanent improvement in our peculiar plantation economy. In a planting country like ours, and in the cultivation of crops such as we grow, requiring active operations on the soil, in some form or other, from January to midsummer, an artificial preparation of the land becomes absolutely necessary, before any system of improvement can be made either profitable or satisfactory. We need not attempt here a demonstration of this fact, so familiar to every cotton planter in the country; we simply ask attention to the effect of our heavy and frequent rains, after the plow, on any of our unprotected fields.

The artificial preparation of "graded ditches and horizontal rows," is the only sure means in the hands of the cotton planter, by which to protect the new lands yet to clear, and to replace and improve a new soil upon the already wornout and bleached hills. So valuable and of such universal application is this principle, that there is no land, however level, upon which rain water may run at all, that is not benefited by horizontalising the rows at least. We are aware that there are some planters occupying favored localities, that continue their plantations in a tolerable state of productiveness, without the aid of this important measure. But these planters make no progress in improving the soil, nor do they succeed in saving what they have.

Again, we remark, what is perfectly familiar to every cotton planter who has given the subject any attention at all, that the more recent the land, after clearing it and putting it in condition for the cultivation of cotton, the more certain and productive is the crop. That the cotton growing on it is more healthy, less affected by insects of every kind, and is grown with much less trouble. Hence it is almost proverbial among cotton planters, "that we must have new land to make cotton on."—Whatever difference of opinion planters may entertain as to the immediate cause of this uniformly healthy and prosperous growth of the cotton plant on our new lands, the fact is invariably the same—a sufficient supply of vegetable mould.

These, then, are the two indispensable conditions that the experience of a half century in cotton growing in this country has demonstrated as the nucleus or skeleton upon which to build up a system of permanent and valuable plantation improvement: First, that upon the virgin vegetable soil of the country, cotton grows best, and

as such it is necessary to so arrange and sytematise our operations, as to receive and keep up that condition of the soil; and second, that this virgin, vegetable soil, unprotected by art, under the active operations of our plantation or cotton culture, bleaches and washes away into the branches, lagoons and rivers, leaving an unproductive subsoil, we are compelled therefore to protect it by artificial means, such as graded ditches and horizontal rows.

This denuded subsoil, though unproductive and exceedingly unpromising, as it too frequently appears after the industrious cotton planter, is by no means valueless, as it is invariably found by analytic investigations, rich in the inorganic or mineral elements of a fertile soil;—nor is this the least of Nature's beneficent provisions for our good. Ere long the progressive expansion of our cotton industry will have extended to the Asiatic formations of the Rocky Mountain slopes, where the same uncertainties attend the production of cotton that are common in India.

Plantation Economy.

No. 9.

July, 1853.

DR. N. B. CLOUD—*Dear Sir:* I may, peradventure, in this writing, touch upon matters which the many deem not of much import, yet others may agree with me, or some one may be stimulated to advocate, so as to draw attention thereto.

The subjects will be fencing and food for stock other than corn and fodder.

As to fencing, I am inclined to agree with a Northern writer, that the cost of fencing in the United States would keep all stock, and that it were much better if a law was passed making owners of stock responsible for all damage, thus forcing every man to keep up his own stock. Let us examine.

On this place there is very little less than nine miles of fencing, and I doubt not if all was counted, there would be full ten miles, or 1760 by 10 equal to 17,600 yards by 4, making 70,400 rails alone; whereas, to fence up for stock amply for all time, and more than the place could use, would not require over one-third, besides the loss of land by fencing, and loss in land from want of culture near fences. The cost of fencing for stock is certainly enough to cause thought and action. But we must now fence, and why should we eternally hold to the worm fence? I ask the planters and farmers of the South, are you willing to remain where you are, even if it is the money making policy? Shall we not improve? Are we to be the only people, negroes and Indians excepted, which are not to use our brains? If not, let us turn our attention to some improvement in fencing. If you do not like the Cherokee rose for a hedge, which fifty years experience proves will do, or the Maclura (Osage Orange) because it grows too large, why not try some native thorn? There is the Washington thorn, a haw, which, growing solitary *in our garden*, has not obtained ten feet in five years time. Then there is the Pyracanthus, a thorny shrub of about 7 6-10 feet in height, unpruned, bears pruning, breaking and mutilation all sorts, and an evergreen, growing readily from cuttings put in Oct. Nov. and Dec. Then there is the Microphilla Rosca, (Burr Rose) making a good hedge, easy to propagate; and why not other thorns than the first, which grow all about us? Hedging needs extra labor and attention for the first three or four years—then only an occasional pruning.

As to *food for stock*, I think I have touched thereon before, but it is too important a consideration to be passed by with a bare hint. It is worthy of chapters, verses, aye, of books. I will only suggest some special attention, not very expressive, but that the corn-crib may not be exclusively counted upon.

Preparing oven corn for feeding I can prove, by absolute trial, to be worthy our attention, and only name over—grinding corn for hogs, either cooking well for hours into their mush, or else turning meal and water into a tight vessel, and leaving until it sours, stirring occasionally. If I claim only one bushel in five to be saved, it will pay fifty cents for some three or four hours work, which an half hand can do as well as any.

Feeding horses, mules and oxen with corn and cob crushed, if only saving in fodder or hay, or if only putting them in better condition, pays *well*.

We now hold, if a proper economy be considered, the planter will provide largely of sweet potatoes for man and hogs at least. An acre requires no more labor than to make thirty bushels of corn, and if only one hundred bushels per acre, will feed more hogs at least, and if young hogs and brood sows, it is a better food than corn.

Then we urge Pindars, or ground peas, though rather more labor, yet pays even better. Pumpkins housed—we have had them, this year, until planting time, or near it. Peas may be profitable saved; we have gathered two bushels per hand per day, which will feed at least milk cows equal to any—yet, we would advise pulling the vine, and threshing in the field. And yet sowing peas in drill in May, land moderately manured, to compensate moving off land, then move when pretty *well in bloom*, and we can feed more cows and mules than with the same land in corn.

We yet have advantage of grass and grain, which we can only allude to. For instance, plow land in March or April, harrow and leave it until 1st of June for crab grass pasture; good land plowed in May is almost sure to be covered by July with crow foot grass. Your oats, barley, or rye fields in June, with a few acres of Bermuda from 1st April to 10th or 25th of October, and if a few acres of grain land be sown with clover in October or November, hogs can be kept in it all winter. But why should many of us, residing in Alabama or Mississippi especially, not dig up cane roots, and plant out in enclosed woodland, and leave for two or three years.

I have seen one bunch so planted spread 25 feet in three or four years. Would it not pay by only putting a few stock on the land? For enclosing land pays for that labor only in the improvement of land. I have said nothing of the artichoke, which I am not now sanguine of, having used them several years, and had gotten to even six acres of a year. Nothing of orchards. Nothing of a great and cheap food for this year—matured squash. Nothing of the mast, acorns, or of the forest, being made available by fencing.

Nothing of enclosed swamps that gentle hogs may have the advantage of crawfish and other water *varmin*. But within are enough hints for reading. I only pray your examination and reflection.

With respect, yours, &c.,

M. W. P.

[FOR THE AMERICAN COTTON PLANTER.]

Irish Potatoes.

Dr. Cloud—*Dear Sir:* There are a great many methods of cultivating the Irish Potatoe, and most generally any way they are planted they grow to the satisfaction of the one who plants.

The mode of culture I like best, is to scatter manure broadcast; lay off the rows with a drill hoe, or plow, three feet and a half apart; place the potatoe, cut if it is large, and whole if small, nine inches apart in the drill, covering them with the dirt and manure from equal distances on each side of the row, making a small ridge over the potatoe, it being covered about six inches.—When the potatoe grows to about four inches, hill them, and then if you can get materials of leaves from the woods, straw of any kind, or shavings, and fill the alley up even with the growing potatoes, you may be sure of a good crop if you plant in the month of February.

The keeping the crop after it is made is not so easy a matter, but they may be preserved till potatoes come again, if dug from the 20th June to the 10th July, or any time when the vines die, and put on a dry dirt floor, very thin, so as not to lie on top of one another. After three or four weeks put very dry sand over them, just so as to cover them, and no more. *The sun should not shine one minute* on them when you dig them, and afterwards *no moisture should be permitted to get to them.* In the fall take the potatoes and put them in barrels for winter use, and they will be found as good as *bought* potatoes.

I have in a few words given you my method of raising and preserving the Irish Potatoe, and I feel assured the telling how it is to be done is easier than the doing.—Many objections may be made to my way, but nevertheless it is a good way.

The materials for mulching, and the dry dirt floor, are not always so easy to be had, yet it takes these to make and keep Irish Potatoes in the South. This is now, at my present writing, the 20th June, and my crop of Potatoes have been dug and housed.

Very Respectfully,

E. A. HOLT.

[FOR THE AMERICAN COTTON PLANTER.]

Dr. N. B. Cloud—*Dear Sir:* Anxious to know the best way to do all the work in which I am engaged in as a small planter and cultivator of the soil, not alone for the purpose of making money, but for many other reasons, I have greedily sought that knowledge from the various publications of the day, one or two not furnishing for me sufficient reading. Money is an object worthy of much attention in this small world of ours, especially as by it is often—too often—weighed the worth of a man; yet I believe it has not a very large share of my affections, being influenced more by the desire of success, by a desire to equal or excel others, and a desire to have things neat.

Within the year, I have seen the experience of one man who grew a very large increase of cotton by the use of some 40 or 50 bushels of cotton seed, whilst another gave equally as large from some 1 to 2 or 300 lbs. of Guano, and yet another gives an increase far exceeding them all, with I do not know how much manure. All this done last year, one of the most remarkable cropping

years I remember to have seen in 30 years, and at least the best since '30 or '39. Why Sir, I heard of land without manure, making as much or more than any of the above, and not noted for fertility, but seeming an effort of nature to stimulate we poor mortals not to despair, notwithstanding the expressed waste of our territory by bad management—so charged by a host of our chemico-philosophic Agricultural writers. I would not doubt either of the above writers—no Sir, that is no way of mine; because I know I have grown crops on parcels of land equally challenging the credulity of my brethren.—All I have to say is, it is best not to give currency to such results until the trial has been made for more than one year. I have been using cotton seed for many years as a manure—not feeding them to stock—but I cannot show a large result with 50 bushels per acre. I have used broadcast, in the furrow, and (around corn) on the furrow, but I think it requires all of 100 bushels. I use a box to haul corn, seed and manure, which measures 47 to 52 bushels of shelled corn. The corn hauled from the field I average at 50 bushels, and suppose of cotton seed 100 bushels, not varying materially, I think. I have hauled out stable manure, using lime, gypsum and ashes around the corn, yet I have never yet seen so surprising results.

I am an experimental man, and expect to be so, so long as I live, and I give it as my opinion that vague and indefinite, or exaggerated reports, do more to prralyze the efforts of the young planter than any other one thing. I frankly admit that I have more than doubled a crop of corn, but only as an experiment, it would not pay.—For instance, I have used 20 loads of stable manure, equal to 10 chords I would judge, about 50 bushels of seed, land all turned under, then subsoiled with a two horse plow, then about 50 bushels more seed scattered over and harrowed in, and when corn was up, a table spoonful of the mixture of equal parts of salt, ashes, lime and gypsum, scattered around the hill and covered with hoe. In this way I made over 60 bushels from land which could not have exceeded 25 without manure, ordinarily. I think this was substantially my *prescription and practice*, and I am sure no one could be induced to err, as the means show a great result ought to follow. But, Sir, after using 100 bushels of cotton seed per year, I am bound to declare I yet have not seen any result showing over 33 per cent. gain. Understand, I do not say that much; 20 per cent. always pleases me very much. Not like a butcher who formerly killed cows in ———, S. C., declaring he could not understand how people made 10, 30, 50 and 100 per cent., for if he made 1 per cent. he was content—buy a cow for $10 and sell her for $20.

If we estimate a chord of manure at two full wagon loads—an ordinary body full twice—we can judge somewhat of the expense of manuring. I find about as many loads of manure can be hauled with two hands, after the manure is gathered into piles, as can of corn with four hands, for I hold manure should be either dropped in regular piles, or else scattered from the wagon. Average your field at 1000 yards, and 7 or 8 loads with a mule team. You cannot haul manure, if by hiring, under 60 cts. per load, including raking up and scattering. Thus by Northern way of manuring, 20 loads per acre, is $12 per acre. If your crop yields over 20 per cent., it would take 6 years to be paid back, which, according to these figures it never will. But this is like hog raising. Estimate corn at 50 cents per bushel, and hire of hand to feed, rent of land, &c., &c., and any hog-raiser will be in debt; whereas hog-raisers, whether cotton planters or pig peddlers, always make by the operation. Better decidedly to put out manure at 60 cents a load and make 20 per cent. increase, than buy guano and make 30 per cent. In one case the money all comes into our own pocket—in the other all goes out to Northern men. Just like hiring a Northern man to school our boys, or feel our pulse. When he has enough, he puts away back to the garden spot of "Buncum," and we nor our country any the richer. Stick to home, home manners and home men. So says

HOME-MADE.

[FOR THE AMERICAN COTTON PLANTER.]

DR. CLOUD—*Dear Sir:* "Some people are wise, and others are other*wise*." There is a certain class of men who till the earth, who strikingly illustrate this pregnant truth. A lesson in agriculture, learned from a father forty years ago, is often practiced by the son long after wiser heads have discarded it as more than useless. If we would practice the moral lessons taught us by our parents with only half the pertinacity with which we cling to their errors in farming, we should be made happier and better men.

There is a class of farmers (fortunately for our reputation, not so numerous now as forty years ago) who turn up their self-conceited noses at every mention of improvements in agriculture as the result of scientific investigation. It is ludicrous, indeed, to see with what holy horror they turn up their eyes at the mere mention of an agricultural paper; and if you talk to them about the chemical analysis of plants and soils, of gases and the like, you almost throw them into spasms.—Not long ago, an appeal to one of these stubborn wiseacres in behalf of the "Southern Cultivator," particularly recommending it as under the editorial management of Dr. Lee, one of the ablest chemists of the day, was answered thus: "Dr. Lee be ———; what does he know about cultivating corn and cotton? Bet he never ploughed a day

in his life." And what is most provoking, these ultra wise gentlemen actually believe that the whole world—a very few excepted—agree with them that "book farming," as they facetiously term it, is the very supreme of the ridiculous!

But, Mr. Editor, I must to my task; which is to detail, substantially, a conversation which I had, not long since, with an old gentleman, my neighbor, who has been cultivating ihe soil unremittingly for the last sixty or seventy years. He was sitting on his fence and inspecting about a dozen of plows, preparing to plant corn. "Good morning, neighbor C.," said I; "preparing to plant corn, I suppose." "Yes," he replied; "doing something of the sort." "Well," I added, don't you think your plows are running rather too shallow?" "Not at all, sir, not at all. I never suffer my land to be ploughed deep; 'twould ruin it, sir, ruin it." "You astonish me, neighbor C.," said I; "I have been taught that deep plowing is one of the very best means of preserving my land; and that it even makes it more productive." "All a mistake, sir; if you want your land to wash away *bodaciously*, plow it deep and you'll soon have none to plow." "But, my dear sir," said I, rather testily, "surely a small quantity of loose earth is more easily washed away than a larger and deeper mass, and the deeper your loose earth is, the more water it will absorb before it begins to run off." "All a mistake, sir," he continued; "depend upon it, it's all a mistake. Now look at *Muggumery's* (Montgomery) farm; he plows deep, and what has he made by it?" "A better farm than either yours or mine," replied I. This rather settled the old gentleman, and he brought the conversation to a close by intimating that "I had better buy *Muggumery's* plantation, then."

Now, this old gentleman, Doctor, is a type of a class unfortunately, even yet, too numerous amongst us; and I fear it will require much time and labor to make the number much less. There *is* a prejudice (a very silly one, to be sure) against what is called "book farming," and consequently, against agricultural periodicals. And I am sorry to add, that while I regard this prejudice, in the extent to which it is carried, as not only weak and foolish, but fatal to all rapid improvement, it has yet *some* foundation in truth. The *cacoethes scribendi*, or some less innocent motive, too often leads our brethren of the plow to give through our agricultural journals, the results of their crude experiments before they have been thoroughly tried. No experiment in agriculture can be entirely reliable before it has been, at least twice, repeated. A new species of corn, or cotton, or wheat, or something else, has been tried, with all the advantages which an intense anxiety to make it succeed, can give it—and thereupon, it is forthwith heralded to the world through some of our agricultural journals as *the very wonder of the age!* Every body is agog to get it; a few trials prove it a humbug; and thus, with thinking men, all confidence in such publications is destroyed.—These things ought not to be so. Ours is emphatically an experimental science. With the lights of science to guide us, we must experiment, if we would improve. But we should withhold our results until they have been repeatedly verified.—Then, and not till then, may we safely communicate them to the public.

CLOD THUMPER.

N. B. I am trying one of our native grasses, which affords some promise of being valuable for winter grazing. When I have proved it to be such, I will communicate it to you; if it turns out to be valueless, I shall keep it to myself.

C. T.

From the New York Agriculture.

How to Dry Peaches.—It is rather out of season, but do your readers know how to dry peaches? Take those of the best quality, just as they are ripe enough to eat, halve them, remove the stone, and sprinkle over them, in the hollow from which the pit is taken, a little nice sugar; dry them in a brick oven after the bread, &c., is withdrawn.

They are far better than if dried in the sun, retaining their aroma and flavor, and besides are totally free from insects. Prepared in this way, from peaches fully ripe, they need no cooking, but are simply soaked out in cold water. All the sugar they require (ranging of course with the variety) is added while drying. Peaches thus dried and prepared, are only inferior to the fresh fruit of which they retain the flavor in a remarkable degree. If you prefer, take them not quite so ripe and peal the fruit, but the flavor is not as good as when fully ripe and it dissipates more in the process of drying.

W. N. White.

Athens, Georgia.

Horticultural.

Orchard and Garden.

HINTS FOR THE MONTH.

ORCHARD.—Examine the base of your peach trees, and if you find a gum extending from the bark just below the surface of the ground, hunt for the worm with a sharp-pointed knife, and *slay him.*

Gather up, carefully, every fruit that falls prematurely from your trees, as it contains a worm whose progeny, if not destroyed, will commit a tenfold havoc another season. Although rather late, budding may still be done upon thrifty growing plum and cherry stocks. Bud also apple, pear, peach, &c., during this and the following month. Full directions for performing this operation will be given in the September number of this journal. Wash the trunk and larger branches of your apple and pear trees with diluted soft soap, and wherever and whenever you find the rascally "woolly aphis," kill them.

GARDEN.—Sow cabbage seed, spinach, turnips, lettuce in shade, radishes, onions for setts to plant out in October, parsnips, beets and mustard. Plant bush and running beans, early peas, cucumbers for pickling. Transplant celery, tomatoes and cabbages. Set out onions for Fall use. Keep the ground clean and well stirred. Every weed that ripens its seed in the garden this season, will cause a great deal of trouble the next. Prepare compost heaps of every kind of trash that will *rot.* Your garden cannot yield you a good crop of vegetables unless you manure it well during the Winter. Attend to this matter, then, in time. By proper preparation and planting, you can have nearly as good a garden in Winter as Summer.

[FOR THE AMERICAN COTTON PLANTER.]

Profits of Fruit Culture in the South.

BY H. A. SWASEY, M. D., YAZOO CITY, MISS.

DR. CLOUD—*Dear Sir:* There are various and conflicting opinions as to whether fruit-growing to any considerable extent can be made a "paying" business in a country so well adapted to the production of cotton as ours. For myself, I have no doubt that it can, and I am happy to find the same opinion entertained by many of our most intelligent and experienced planters. There is no disguising the fact, however, that with the mass of our agricultural community the subject of fruit culture is at this time a very unpopular one. And why? Simply because cotton, cotton, cotton, is the one everlasting idea which gives "shape and color" to all our plans and expectations, and makes us entirely unwilling to engage in any experiments not having for their chief object the increase of the "number of bales per hand"! That this state of things is in direct conflict with the true interests of the South, and one of the principal causes of her unenviable position in the scale of agricultural prosperity, must be, I think, sufficiently evident to every reflecting mind. The mechanic arts, manufactures, stock-raising, grain-growing, and the cultivation of fruit, are the means by which our more enterprizing neighbors of the North have become a rich and prosperous people, while we, with far greater facilities for the accumulation of wealth and the consequent means of enjoyment, have been contented to remain idle spectators of the rapidly increasing prosperity of our Yankee friends, or, what is still worse, have directed nearly all *our own energies* to the advancement of *their interests!*

But a brighter day is dawning upon our prospects.—The spirit of improvement, which has so long slumbered beneath the unhallowed influence of political strife, is beginning to awake, and we may at length congratulate ourselves upon the probable participation in those progressive efforts which are becoming so eminently characteristic of the age!

To return, however, from this slight digression into which the *self-inflicted* "wrongs of my bleeding country" have unconsciously led me, I would repeat that there is much diversity of opinion as to the comparative "profits of fruit culture in the South." Northern writers upon Pomology seem to be under the impression that good fruit cannot be raised in this climate at all! And even the lamented Downing, with all his pomological knowledge and experience, dared not confidently recommend a dozen kinds of Apples and Pears which would succeed well in this latitude. There are others again, both at home and abroad, who admit that ours is a pretty good fruit country, but still cling to the opinion that cotton at "present prices" is by far the most profitable crop we can grow! And last and least comes the visionary few who think that an orchard of well selected fruit would be one of the most remunerative adjuncts to every well ordered plantation.

It is the object of the present article to throw some light upon the respective merits of these conflicting views, and should the statement of facts here presented be in the least conducive to a more critical and discriminating examination of our pomeological resources, all will be accomplished that I proposed to myself in the outset.

As the first step in the practical consideration of our subject, let us see how the "profits of fruit culture" is regarded in the North and East, where long experience in this matter has reduced theoretic principles to profitable practice.

J. J. Thomas, of N. Y., gives us in the Pat. Of. Rep. for 1850–51, an excellent article on the "Culture of Fruits," from which I take the following estimate of the cost of an acre of land planted in Apple Trees:

Cost of land	$50
Cost of 50 trees	10
Cost of setting out	5
Total cost	$65

The crops taken from the land for the first four years he goes on to say will pay the interest on the original cost, and the product of both land and trees will more than pay it as they become larger. The cost of an acre of full grown Apple trees, therefore, would be no more than $65! The interest on this amount, at 6 per cent, would be about $4, and the annual cost of cultivation he puts down at $6 more, making $10 in all as the actual cost of a full crop of Apples from an acre of ground.—Each of these 50 trees will yield, according to his estimate, an average of 8 bushels, or 400 bushels for the whole number, which at $10, the cost as above, would be just 2½ cents per bushel! So much for the *cost*—now let us see what the profit on this same investment of $65 will be. A good many years ago, before Rail Roads and canals were quite as plenty in the North and East as they are at the present day, good Apples could be bought at the orchard for 12½ cents per bushel—never for less even in the most interior locations. For many years past, however, Apples have been ready sale at 25 cents per bushel *delivered on the tree*. At this price the product of our 50 trees would come to $100, and, after deducting interest and cost of cultivation as above, would leave us the snug little sum of $90 as the nett annual income of our investment of $65, or nearly 150 per cent. profit!

But this is an imaginary orchard which may peradventure be somewhat more profitable than a real one—let us see!

In 1845, Richard Hand, of N. Y., sold $440 worth of Apples from one acre of ground. A well known fruit grower in the same State sold in one year $300 worth of Plums from one-fourth of an acre! Messrs. Jones, of Mass., raised upon 112 Apple trees and 224 Peach trees, all occupying less than 3 acres of land, $400 worth of Peaches and 228 barrels of Apples, worth $200 more, making $600 in all! He also sold $30 worth of fruit from a single Bartlet Pear tree, only 3 years grafted!—Mr. Dudley, same State, sold $25 worth of Cherries from a single tree. The original Herbert Apple tree produced 40 bushels of fruit one year and 20 the next. The original Bass Apple tree, 7 years grafted, yielded 15 barrels of fruit, which sold for $30. A Howard Pear tree, belonging to Mr. Wyeth, of Cambridge, Mass., yielded 9 barrels of fruit which sold for $45. A Dix Pear tree, in same place, produced $46 worth of fruit at one crop!—The original Dubois Early Golden Apricot produced $45 worth in 1844—$50 in 1845—and $90 in 1846. Mr. Pennell, of Pa., has a Grape Vine that produced 75 bushels of Grapes which sold at $1 per bushel. Mr. Laws, of Philadelphia, has a Washington Plum tree which yields $60 worth of fruit per acre. Judge Linn, of Pa., has 2 Apricots which produce $120 worth of fruit yearly.—Four trees of the Tewksbury Winter Blush produced 140 bushels of Apples in one year, 90 bushels of which sold at $1 per bushel. Many trees of the Rhode Island Greening have been known to produce from 30 to 40 bushels annually, and the celebrated Vincennes Pear tree has often yielded over 100 bushels, and twice as high as 140 and 184 bushels! Almost innumerable instances similar to the above might be recorded, but it is unnecessary. Enough has already been said to show that the cultivation of fruit is not altogether an unprofitable business in those older portions of our country where more or less attention has been devoted to this subject for the last 150 years.

Fruit growing in the South is yet so much in its infancy that we cannot of course present so many *real* instances of profit from this source, but we shall endeavor to make our *imaginary* ones as correct as figures and our own observations will permit. For the purpose of more correct illustration, we will contrast the nett profits of an acre in Cotton with one planted in Apple trees. At the present prices of labor in the South, the cost and profit of an acre of Cotton is nearly as follows:

Interest on 1 acre land worth $25, at 8 per cent.,	$2,00
Breaking up with double team	2,00
Planting and seed	1,00
Barring off and scraping	1,50
Ditching and breaking out middles	2,00
Hoeing and Sweeping	1,00
Picking 1400 pounds cotton, at 75c.,	10,50
Ginning and packing	3,00
Hauling to market	1,50
Total cost	$24,50
Credit by 1 bale cotton, 400 lbs., at 8c	32,00
Nett profit	$7,50

In the above estimate we have taken one bale of 400 pounds per acre as an average yield: this, however, is almost one-half too much; but granting that every acre planted to cotton produces 1000 lbs. seed cotton, and that it will take 1400 lbs. to make a 400 lb. bale, we then have the following figures as the cost and profit:

Dr.	To cost of 5-7 bale cotton	$21,50
Cr.	By sale of do. at 8c. per pound,	22,88
	Nett profit	$1,38

The cost of labor which I have assumed, as above, may seem rather *too high*, but when we take into consideration that nothing has been set down for wear and tear of tools, &c., and the impoverishment of the land, I think the estimated cost will be found rather below than above the mark.

Let us look for a moment at the contrasting picture.

An acre of land planted in Apple trees, 25 feet apart each way, will cost in this country about as follows:

Cost of land	$25,00
Cost of 70 trees, at 25c	17,50
Cost of setting out, at 5c	3,50
Total cost	$46,00

Assuming, as before, that the crops taken from the land will pay the interest until the trees come into full

bearing, our "cost and profit" account will stand thus:

Interest on $46, at 8 per cent	$3,67
Cost of cultivation	5,00
Total cost	$8,68
Credit by 8 bush. Apples per tree, or 560 bushels per acre, at 50c	280,00
Nett profit,	$271,82

[FOR THE AMERICAN COTTON PLANTER.]

Tomatoes.

DALLAS COUNTY, 19th July, 1853.

DR. N. B. CLOUD—*Dear Sir:* During last year I read in one of the Agricultural periodicals, of Georgia, I believe, a short article on the raising of tomatoes, in which the author recommended that they should be planted in poor ground, not manured, and suffered to run upon the soil, to enable them to put out fresh roots whenever they touched the ground, as by that means you would be able to bear all of the season, &c. Now, to me, it seems that all of this is wrong. In the first place, it is not necessary that they should be permitted to run upon the soil to continue to bear, and in the next place, if permitted to do so, my experience is that they will rot upon one side before the other side gets ripe.

Looking upon this fruit as being one of the most healthy, as well as one of the most universally used, I will do no more than give you my plan of cultivating them, and believe that, whoever does likewise, will be perfectly satisfied with the results. To commence, dig two ditches with a spade, 14 to 16 inches apart, the full depth and width of the spade, throwing the dirt upon the outside of the ditches, then fill them entirely full of stable manure, rotted or unrotted, it makes little difference. This should be done in January; then, when the tomatoes are large enough to transplant, dig another ditch deeper than the others, say from two to four inches, throwing the dirt from this ditch over the manure, and at the bottom of this ditch plant your settings, about 20 inches apart, and as they grow pull dirt to them, so that by the time they are up with the top of the ground, they are sufficiently deep rooted, not to be affected by drought, and not standing immediately in a manure bed, do not burn, (to use an agricultural phrase,) and when the vines are sufficiently high, place firmly in the ground forks about two feet high, to one side of the tomatoes, about a foot or so from them, letting them be good and strong; then place other forks a foot or two back of the first, and about four or five feet high; then, place good strong poles along each set of forks, and then place good strong brush, leaning against the poles, and two or three feet higher. Now train your vines, and you will have the best, most delicious, and largest fruit you ever ate, and when frost comes, there will still be hundreds, and not one solitary rotted tomatoe.

Your obedient servant,

D. C. S.

Miscellaneous.

[FOR THE AMERICAN COTTON PLANTER.]

Wagon Wheels.

DR. CLOUD—*Dear Sir:* While attempting to elucidate the laws governing the passage of loaded articles over obstructions, one great error has been to compound them with the principles of the lever, while very little analogy exists between them, and every attempt to demonstrate such analogy, tends only to mistify and obscure the subject.

By applying the principles of the inclined plane in connexion with a few well known geometrical axioms, such formula may be constructed and demonstrated as may be understood and applied by any operative of ordinary judgment.

Suppose a wheel or loaded cylinder, 50 inches in diameter, to be placed on a level surface, and in front of it an obstacle presenting to the wheel a vertical surface five inches high—the wheel will strike the obstacle with a point in its circumference sixteen inches from the point which is in contact with the level surface, and on which it rests, and when the wheel is rolled upon the obstacle, its centre or axle will describe a curve, which very nearly coin with an inclined plane whose base is 15 inches, height 5 inches, and length 16 inches. Now, although this plane is not perfect, it may safely be so considered, for the great inclination of the plane is first presented to the moving wheel, its momentum will be a sufficient compensation, and thus equalize the resistance.

Hence, notwithstanding the obstacle may pre-

sent a vertical surface to the wheel, the wheel itself converts that vertical surface into an inclination, and thus easily surmounts it, always premising said vertical height to be less than the radius of the wheel. This is one of the advantages gained by using wheels for the purposes of transportation. The other one is the substitution of a smooth for a rough surface, and the transfer of the wearing or sliding parts to that smooth surface —so if our roads were all smooth, like ice, wheels would be useless. See the sleds, sleighs, &c., of cold climates.

The height of the obstacle will determine the height of the plane—the radius of the wheel its length—which will always be in proportion to the square root of the radius. For the elucidation of the above, as well as for future reference, the following table is presented:

Diameter of wheel in inches.	*Square root of radius in inches*	*Height of plane or obstacle in inches.*	*Length of plane.*	*Weight of lead held by 100 lbs.*
50	5	5	16	320
60	5.48	5	17½	350
70	5.92	5	19	380
80	6.32	5	20¼	405

By the above, we see that the numbers in the 4th column are in the same proportion to each other as those of the 2nd, and that the greatest effect is produced when the 100 lbs. weight is applied to the larger wheels, providing such power is continuous, so as to overcome the greater length of the plane, and is applied in a line parallel to that plane. But before we adopt the high wheel, it will be well to consider what will be the expense in the way of disadvantages.

First. If we construct a high wheel with strength equal to a low one, it must be heavier in proportion to the squares of their diameters, and it will elevate its axis or point of attachment so high that the direction of the draft or power will deviate too much from a parallel to the plane.

Now let us consider the wagon one-third of the load, and the wheels one-half of the wagon in weight. These data, when applied relatively to the 50 and 70 inch wheels, result in diminishing the effective force attached to the large wheel about 51 lbs. by increased weight, and 21 lbs. by deviation in line of draft above the amount of diminution sustained by the small wheel—thus showing the small or 50 inch wheel to have the advantage *over* the *large* one *by* 12 lbs. *effective* loading.

It is obvious from the above and other extended calculations, that the true medium for the height of wheels, exists between the above sizes, but nearer the smaller one, subject always to vary with attending circumstances; for instance, very rough roads require larger wheels, and smoothe ones may be smaller, and, consequently, lighter.

Another fact is developed by the above examination (*i. e.*) that we suffer great loss of power by attaching our draft animals at a point so high as to give the line of draft less inclination to the horizon than the planes of obstruction, thereby expending the force of your animals in pressing the load against obstacles instead of raising it over them; and in addition to this, it can be demonstrated beyond cavil or doubt, (the opinion of "phi so's" to the contrary notwithstanding,) that the lower a horse is hitched the more he can pull, and it may be well to mention that, when the line of draft is parallel with the plane of obstruction, you obtain the equivalent of the power applied, minus friction, and when the line of draft inclines less than the plane of obstruction, there is a loss of power and increased friction, and when the line of draft inclines more than the plane of obstruction, we not only obtain an equivalent for our power minus friction, but that friction is diminished in the ratio of such excess of inclination. H.

Oak Bowery, July 12.

[FOR THE AMERICAN COTTON PLANTER.]

Rail Roads.

Dr. Cloud—*Dear Sir:* I find in the Report of the Secretary of the Treasury to Congress, in 1852, some admirable remarks regarding the economy and profits of Rail Roads in the United States. As these views must meet the concurrence of all who have investigated the subject, and are supported by elaborate statistics, they are entitled to confidence, and will no doubt command more attention from your readers than any thing which I could contribute, under this head, to your pages. I shall take the liberty of greatly condensing the remarks of the Honorable Secretary.

Assuming the occupied area of that portion of our territory east of the Rocky Mountains to be 1,100,000 square miles, at least 1,050,000 are devoted to agriculture, while not more than 50,000 are occupied by the manufacturing and commercial classes. The great peculiarity which distinguishes our own from older countries is, that we have no *interior* markets. The greater

part of our territory has not been settled long enough for the development of that *variety* of industrial pursuits which constitute them. So entirely are our people devoted to agriculture, and so uniformly distributed are they over the whole country, that some of our largest States had no towns, in 1850, containing a population of over 10,000. The wide space that separates the producing and consuming classes, necessarily implies the *exportation* of the *surplus* products of each. As the markets for our agricultural products lie either upon the extreme verge of the country, or in Europe, the greater part of our domestic commerce involves a *thorough* movement of nearly all the articles of which it is composed. Upon the average of common highways, the cost of transportation is not far from 15 cents per ton per mile. Estimating the value of wheat at $1,50 per bushel, and corn at 75 cents, and 33 bushels of each as a ton, the value of the wheat would be equal to the cost of its transportation for 330 miles, and the corn 165 miles. At these respective distances from market neither of these articles would have any commercial value, with only a common *earth* route as an avenue to market. But we find that we can move property upon Rail Roads at (1½) one and a half cents per ton per mile, or for one-tenth the cost upon the ordinary road. The Rail Road, therefore, extends the economic limit, after cost of transportation of the above article, to 3,300 and 1,650 miles respectively. At the point upon the common road where these articles would cease to have a commercial value, wheat would be worth $44,50 and corn $22,27 per ton by the use of Rail Roads, which sums respectively would represent the actual increase of value effected by the same. The following table will show how the value is affected by distance, according to the means of transportation:

	Ton of Corn by the Com. Road.	*Ton of Corn by Rail Road.*
Value at market.....	$24,75	$24,75
20 miles from market.....	21,75	24,45
40 " " "	18,75	24,15
60 " " "	15,75	23,85
80 " " "	12,75	23,55
100 " " "	9,75	23,25
120 " " "	6,75	22,95
140 " " "	3,75	22,65
160 " " "	75	22,35
170 " " "	00	22,20

In this manner Rail Roads in this country actually add to the immediate means of our people. *We are therefore in no danger from embarrassment on account of the construction of lines called for by the business wants of the community, as these add much more to our active capital than they absorb.* The actual increase in the value of the land, due to the construction of Rail Roads, is controlled by so many circumstances, that an accurate estimate can only be approximated, and must, in most cases, fall far short of the fact. Not only are cultivated lands, and city and village lots upon the route, affected, but the real estate of cities, hundreds and thousands of miles distant. The Rail Roads of Ohio exert as much influence in advancing the price of real estate in the city of New York, as do the roads lying within that State. But taking only the farming lands, where the influence of such a work can be more distinctly seen, there is no doubt that in such case the increased value is many times greater than the cost of the road. It is estimated by the President of the Nashville and Chattanooga Rail Road, that the increased value of a belt of land 10 miles wide, lying upon each side of its line, is $7,50 per acre, or $96,000 for every mile of road, which cost only $20,000 per mile. That work has already created a value in its influence upon real property alone, equal to about five times its cost. What is true of that road is equally true, probably, of the average of roads throughout the country. It is believed that the construction of the 3000 miles of said road in Ohio will add to the value of the landed property of the State five times the cost of the road, assuming this to be $60,000,000. In addition to this, the Rail Roads of Ohio are stimulating the growth of her cities with extraordinary rapidity. The valuation of the State of Massachusetts went up, from 1840 to 1850, from $290,000,000 to $580,000,000—an immense increase, and by far the greater part of it due to the numerous Rail Roads which she has constructed.

Having shown the influence of our Rail Roads in creating values, greatly above their cost, the next point to be considered is the income of these works.

INCOME OF RAIL ROADS.

There is no other country in the world where an equal amount of labor produces the same bulk of freight for transportation as the United States. Take, for instance, a cotton producing State, like Mississippi or Alabama.—Nearly the whole industry of these States is engaged in the production of this staple—all of which is exported. It follows that all articles entering into consumption must be imported. This necessity of an inward and outward movement, equal to the entire surplus agricultural product, is peculiar to the United States. While this is the case, it is equally true that new settled sections of country will often supply a larger amount of traffic than an older one. An equal amount of labor would produce four times as much corn or wheat in Illinois as in Massachusetts, consequently contribute four times as much to the support of a Rail Road. It is therefore a great mistake to suppose that because a country is new it cannot yield a large traffic to a Rail Road. In the Southern and Western States only one year is frequently required to prepare the soil for crops, which may be renewed for a long series of years.

In newly settled districts the prime necessaries of life that enter into consumption are mostly imported from distant markets at a very heavy cost of transportation. In the Southern and Western States the soil supplies so large a surplus for export, as to afford to their Rail

Roads a larger *bulk* for transportation per mile than in the Eastern States. Yet the Southern and Western Roads are built at one-half to one-fourth the cost per mile of those Eastern roads, and, as the charges are nearly the same for transportation, it follows that the revenues are generally greater upon the latter. Numerous illustrations of this fact might be given. The earnings of the Cleveland and Columbus Road, in Ohio, have been greater than those of the Hudson River Road, since the opening of their respective lines, though the former, 135 miles long, cost but $3,000,000, while the latter, 144 miles, cost $10,000,000.

In corroboration of the views of the Secretary regarding the relative amount of transportation afforded by the new and agricultural, compared with the manufacturing and commercial States, a striking testimony is afforded in the fact that the receipts of the Eastern and Northern roads, collectively, are but 35 per cent. for freight and 65 per cent. for passengers, while the Southern roads show an income of 25 per cent. only from passengers and 75 per cent from freight. The most profitable road in the South, the Central Rail Road from Savannah to Macon, the stock of which is worth $120 per share, received during the first year only $141,547 from passengers and $803,961 from freight, or about 15 per cent. for passengers. For years past about 90 per cent. of its gross income has been from freight. As a general thing you may estimate the value of a road to a country—especially to the great agricultural interest—by the amount of freight which passes over it. By this rule our Southern and Western roads will be found, in proportion to their cost, to have contributed more to the interest of the agriculturist, and consequently to the value of farming lands, than the roads of New York and New England.

The following table will show the comparative receipts from passengers and freight of some of the leading roads of the North and South, and the respective per cent. of the same compared with the cost of the roads and equipments, which I have made out, for the most part, from the fiscal operations of the same during the past year.—The table shews rather an undue proportion of heavy freight roads in the Northern section. If the great chains of roads from Albany to Buffalo, and from Washington City to New York, which derive their principal support from passengers, were excluded, it would shew a result yet more unfavorable to the North; and if the LaGrange, South Western, and Muscogee Roads of Georgia, and the Charlotte and Greenville roads of South Carolina, were included, it would materially vary the result in favor of the South, both as regards the cost per mile and the ratio of freight receipts. The cost of the Central Road of Georgia is independent of the new iron lately laid upon that road, the cost of which, however, has been principally provided for, I believe, out of the reserved fund of accumulated profits.

TABLE,

SHEWING THE COST AND COMPARATIVE RECEIPTS FROM THE EARNINGS OF THE PAST YEAR OF NORTHERN AND SOUTHERN RAIL ROADS, *EXCLUSIVE* OF PASSENGERS.

	Length in Miles.	*Total Cost with Equipments.*	*Cost per Mile.*	*Receipts f'm Freight and Mails.*	*Per cent. of Freight Receipts to cost of Road.*	*Total Receipts.*	*Expense of moving a Passenger per mile, in Mills.*	*Expense of moving Freight per ton, per mile, in Mills.*	*Ratio of Total Expenses to total Receipts.*
Northern Roads.									
New York and Erie	464	$37,500,000	$59,377	$2,155,129	8	$3,537,766	8	10	48
Hudson River	144	10,500,000	73,108	981,263	2¾	1,063,659	11½	16	68
Boston and Lowell	25¾	1,995,000	77,485	220,948	11⅝	388,108	21	14	66
Boston and Maine	74¾	4,100,000	35,116	228,654	5¾	601,522	9	18	49
Boston and Worcester	44¾	4,800,000	108,574	334,105	7	758,819	13	16	54
Cheshire	53¾	3,000,000	55,957	168,023	5⅝	247,769	18	17	65
Fitchburg	51	3,600,000	71,346	321,204	9	574,575	14	19	59
Western, (Mass.)	155¾	9,900,000	64,062	724,392	7¼	1,339,873	10	18	49
New York and New Haven	61	4,800,000	79,988	159,116	3	804,714	7		46
Total and average of Northern Roads	1073¾	70,195,000	65,450	4,612,824	6⅝	9,410,805			
Southern Roads.									
Georgia Rail Road and Branches	213	4,100,000	19,235	636,214	15½	934,124	19	21	51
Central, Ga.	191	3,956,000	17,092	803,961	25	945,508			46
Macon and Western, Ga.	101	1,276,000	12,590	177,647	14	269,546			43
South Carolina Road and Branches	240	6,908,000	28,785	775,000	11¼	1,050,000	20		40
Montgomery and West Point	88	1,400,000	15,909	84,986	9½	200,538			51
Total and average of Southern Roads	833	16,940,000	20,366	2,477,808	14¾	3,399,776			

The *total* receipts of the Northern Roads is about 13½ per cent. on their cost, and of the Southern Roads 20 per cent. on their cost, yet the proportion of expenses to receipts is rather in favor of the Southern Roads.

A. A. DEXTER, *C. E.*

Mobile, July 25th, 1853.

[FOR THE AMERICAN COTTON PLANTER.]

Sheep vs. Dogs.

DR. CLOUD—*Dear Sir:* I have been quite interested with the description given in your Planter of the Cotswald sheep. In this country, noth-

ing pay so poorly as the sheep, *owing to the dogs.* Chain one portion, and cut the throats of the other, and nothing would pay so well. Nature has been bountiful in provision to enable us to raise mutton and wool in competition with any other part of the world, but folly stands in the way, and effectually destroys what Nature has so kindly placed within our reach. Mr. Walker, an intelligent and most worthy gentleman, representing the county of Richmond in the Georgia Legislature, attempted to pass a dog law, and it was "laughed down" in the House. It was concluded by the other members that the *People* would, by acclamation, condemn any member who would vote for a remedy of this most crying evil, and, therefore, would not entertain the question at all. In my opinion, this is a great mistake. The people would ratify any sensible law that would abate the nuisance. To say that they would not, is to stultify the majority. If I were an office seeker, I would straddle the canine race for a hobby sooner than any other question that occurs to me. Sheep and dogs cannot be turned loose in the same country any more than cats and rats. There is no *necessity* for exterminating either, but the people have sense enough to know that, as one or the other has to be secured, that we can *afford* to secure every useful dog, and to raise sheep by securing them against their natural enemy, is to determine that *sheep shall not, in any quantity, be raised to a profit.* I do not think you could better appropriate your useful talents than by wielding your able pen in behalf of the innocent and suffering lamb.

Down with the dogs and

VIVE LE MOUTON.

MONTGOMERY, July 15, 1853.

[FOR THE AMERICAN COTTON PLANTER.]

Will Peas kill Hogs?

POPLAR CREEK, Yazoo Co., Miss., *June 5th*, 1853.

DR. N. P. CLOUD—*Dear Sir:* I received, a few days ago, the five first numbers of your invaluable journal, the *American Cotton Planter*, and am highly pleased with it. I feel that I am already amply compensated for my subscription if I were not to receive another number. In fact the information derived from the two pieces in the January and February numbers, from the pen of R. S. Hardwick, Esq., alone, is worth $100.—I allude to the pieces upon the subject of Hill-side Ditching. I have seen many plans adopted for preserving our hill lands by ditching, but all were objectionable to me; but the plan laid down by Mr. H. I think is without a single fault or objection.

In the April number of the American Cotton Planter, I see the question asked by one of your subscribers—*Will Peas Kill Hogs*—and desires information on that subject. Although it is a subject almost worn thread-bare, yet I am tempted to say a few words in defence of the much abused, and (I think) highly valuable crop—the Pea—and state my reasons and experiments. In 1850 my hogs were suffered to run at large in the woods until I gathered my corn in the fall (say about 1st November) they were then driven up and put in the pea field, and in a short time commenced sickening and dying. I immediately charged it to the peas; but not willing to give up so valuable a crop, I determined to open the hogs as they died and examine them. I did so and found that the intestines of *all* of them were perfectly crammed with the *hulls of unripe acorns* which had fallen in the early part of the season, and all the small intestines were in a state of inflammation, and indeed, in some instances, mortification had taken place, and the urine passed by them, *before they were put in the pea field*, was of a deep claret color, and wherever it was passed it stained the ground almost like blood had been spilt. I am convinced that the fruit of the acorn tree acts upon the hog in the same manner as the bark of that tree does upon an individual, which you are aware is one of the greatest astringents we have.

Feeling satisfied, then, that it was the acorns, and the inability of the hogs to pass the hulls from the intestines, that caused their death, I determined the next year to adopt some plan to prevent their getting to the acorns, and fully to test the peas. So in April, 1851, I sowed down a field in peas, and about the 20th August turned in my hogs, big and little, old and young. This field kept them in fine order until I gathered my corn in the fall, where I had a fine crop of peas growing. About 1st November I turned them in that field, where they remained until 1st January, when I killed my pork weighing from 180 to 400

lbs. The balance of my hogs were suffered still to run in the field until plowing time, (March) and the result was that I did not lose the first hog of any sort, size or description. The next year ('52) I failed to sow my field of early peas, owing to the scarcity of pea seed, and my hogs suffered to run in the woods, as in 1850. The result was the same as that year—I lost many of my finest hogs. These are facts, and I give them to you for what they are worth. This year I have two fields sowed down in oats for them: one field sowed early and one late, which will afford them pasture until I gather my corn and prevent thier access to the acorns, and about 1st November shall turn them in on my peas, and whatever the result may be will advise you.

Wishing you and the American Cotton Planter great success,

I am, dear Sir, your ob't sv't,

J. W., Sr.

From the Scientific American.

More about Lightning Rods.

The subject of lightning rods is one of great interest to every man and woman in our land, and from the many fatal accidents which have taken place this season during thunder storms, it is exciting much attention at present; of this we are certain, from the number of letters we have recently received on the subject. There is no saying more common than "doctors certainly differ," and it is just as applicable to the different opinions entertained by different men, respecting lightning rods, as anything else. One considers that a round form of lightning rod, is as good as any other; a second considers a square form the best, while a third looks upon the twisted form as the best of all. One advocates glass insulators for the rods, while another asserts that wooden brackets are sufficient. One advocates a continuous rod like a wire, while another believes the chain or the jointed conductor to be perfectly safe. One says the conducting surface is the grand desideratum, while another says "the solid section is the main object." Out of these conflicting views can anything certain and tangible be adduced for the construction and erection of *safe* lightning rods? We believe there can.—The requisites of a good lightning conductor are well known, and the different opinions advanced respecting this and that conductor, refer more to the most effectual conductor which can be made at the smallest cost than to the real scientific merits of a lightning conductor in itself, as it relates to perfect action. A thick iron or copper rod extending above the highest part of a house, continuous in its connection, perfectly insulated, kept separate and distant from any large metallic body, and terminating in a moist part of the earth, such as a pool or well, is a perfect lightning conductor. While we write this, we have before us a model of the lightning conductor of G. W. Otis, of Lynn, Mass., for which a patent was granted on the 26th August, 1851, and which is now owned by L. Lyon & Co. of this city, (Mr. Lyon is the author of a treatise on lightning conductors recently published by Putnam) it is a good and certain conductor, but expensive. There are some, however, to whom expense is but a secondary consideration, and for their benefit we will describe it.—The main rod is of iron, square in form, and made in sections screwed into one another, in metal eyes, secured to the binding insulators, which are glass cylinders secured to the dry wooden collars that bind them to the building. Each binder terminates in a horizontal point at its extremity;—the upper parts of the conductor are composed of many points branching off, and all tipped with gold. The insulation is perfect, and the rod is more nearly continuous than if it were formed in link sections. The use of any non-conducting substance as an insulator is old and well known, and any person who wishes to erect a rod to suit himself, cannot go wrong in his choice of substances, such as ivory, dry wood, &c., nor can he go wrong if he only uses a conductor of a sufficiently large diameter. We believe the round rod is just as good as the square one, and the solid section, not the surface, is the main object. The most important questions to be asked are, "what is the smallest diameter of rod that will suffice to form a good conductor, and what size of a building (area) will one rod protect." The last question is not easy to answer. Unless the chimneys of a house are very near together, a branch rod should be erected on each, extending two feet above them, and vertical branch points two feet above the roof should be placed within twenty feet of one another. It is no easy matter to tell the size of the least cross section that will answer. E. Merriam, who has devoted much attention to the subject, asserts that No. 10 iron wire is sufficient, and that 100 feet of it can be purchased for one dollar. Iron wire five-sixteenths of an inch in diameter, is the size used for our large public armed ships, and these have never failed to afford protection to the ship and to all on board.

As copper wire is eight-times a better conductor than iron, we prefer it. It costs only fifty cents per pound, and a good and perfect conductor made of copper wire can be put up for one shilling per foot. Excellent insulators can be made of wooden cleets varnished, painted, or boiled in oil, nailed with iron nails (covered with wax or varnish) to the building, and merely having holes

bored in them for the wire to pass through. The copper wire will last ten times longer than an iron one; it should be pointed with a file, and not hammered. We feel no hesitancy in speaking of copper wire as being a cheap and reliable conductor, and we would trust to a section of it not more than three-eighths of an inch thick in preference to an iron wire of at least twice the diameter. There is not a man in our land who cannot erect his own lightning conductor, there being no great amount of science or art required; care and attention, with what we have said on the subject, will enable any man to put up his own lightning rod.

Contents of this Number.

Cotton and its prospects..... p. 225
Army Birds..... 230
Cultivation and Preparation of Sumac..... 231
Mineral Manure Theory..... 232
Planting and Cultivating Cotton..... 234
Hill Side Ditching—Premium Essay..... 235
Cotton Insects..... 238
Intelligent Mechanics..... 240
A Great yield of Corn..... 240

EDITORIAL NOTICES.

Work for the Month..... 241
Our Subscription List..... 242
Agricultural Association..... 242
Miner's Domestic Poultry Book..... 242
DeBow's Review..... 243
Cotton, its improved and true Culture 243

PLANTATION ECONOMY, No. 9..... 244
Irish Potatoes..... 245
Practical Remarks—"Home-Made"..... 245
" " "Clod Thumper"..... 246
How to Dry Peaches..... 247

HORTICULTURAL.

Hints for the Month..... 248
Profits of Fruit Culture..... 248
Tomatoes..... 250

MISCELLANEOUS.

Wagon Wheels..... 250
Railroads..... 251
Sheep vs. Dogs..... 253
Will Peas kill Hogs..... 254
Lightning Rods..... 255

Saxon Merino Bucks.



THE subscriber has eight young Buck Lambs, of the above named fine breed of Sheep, and four of the same breed with a dash of the South Down. These Lambs are now four months old, of fine size, good condition and health. Gentlemen wishing to cross this fine variety of Sheep on their flocks, can have these at a small consideration above their market value for mutton. Price $10 each, deliverable at any time after the first day of September. If to be shipped, they will be delivered at Shorter's Depot, on the Montgomery and West Point Rail Road, in a good secure cage for which $1 will be required.

N. B. CLOUD.

July 1st, 1853.

For Sale,
A good Cotton Plantation.

THE subscriber offers for sale his valuable Cotton Plantation, lying on the waters of Line Creek, in Macon County, Ala., and containing **960 Acres.**—There are 600 acres cleared on the tract and in successful cultivation. All the open land is protected by *grade ditching*, and the rows *horizontalized*. The place is well watered and healthful: two good springs in the Plantation, and a never-failing well of water in the yard. Improvements, such as Dwelling House, Negro Cabins, Stables, with Gin House and Screw, &c., in good order.—A further description is deemed unnecessary, as any gentleman wishing to purchase such a place, will prefer examining for himself.

Terms will be made to suit the purchaser. Stock and provisions will be sold with the place, at reasonable rates.

August 1, 1853 3t T. P. G. BRUMBY.

SADDLERY.

F. A. ROBBINS & CO.,
CORNER WATER AND ST. MICHAEL STREETS,
MOBILE, ALA.,
DEALERS IN
SADDLERY,

INVITE the attention of *Merchants* and *Planters* to their extensive stock, comprising Saddles, Bridles and Martingales, Harness of every description, Leather of all kinds, Saddlery Hardware; Saddlers', Shoe-Makers' Carriage-Makers' Tools, Materials and Trimmings. Also, a superior article of Patent Stretched and Riveted *LEATHER BANDS*, for Cotton Gins, Mills, and Machinery, of all kinds that require Belts. All of which they offer for sale at *Low Prices*, wholesale and retail.

Mobile, July 1st, 1853-6t

J. A. & S. S. VIRGIN,

MACON, GA., AND MONTGOMERY, ALA.,
DEALERS IN
PIANOS, HARPS,
GUITARS, STRINGS,
Sheet Music,
AND A
VARIETY OF MUSICAL MERCHANDISE,
GOLD AND SILVER WATCHES,
JEWELRY, SILVER AND PLATED WARE,
AND FANCY ARTICLES.

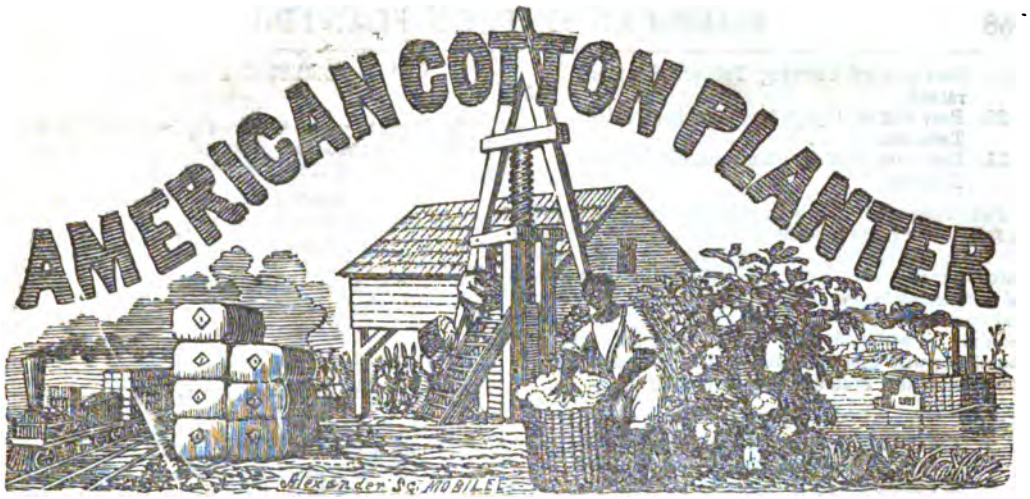
N. B.—Watches, Clocks, and Jewelry repaired in the best manner.

April 1, 1853-6t

THE SOUTHERN CULTIVATOR, is published on the first of each month, at Augusta, Geo. D. LEE, M. D., Editor, and D. REDMOND, Assistant Editor. *Terms:* $1 a year, in advance.

THE SOUTHERN LADIES' BOOK, published in New Orleans, devoted to polite literature, and edited by Mrs. L. VIRGINIA FRENCH, at $3 per annum, invariably in advance. Emphatically the Book for Southern Ladies.

ALABAMA JOURNAL JOB OFFICE, PRINT.



A Monthly Journal, devoted to improved Plantation Economy, Manufactures, and Mechanic Arts.

Vol. I. MONTGOMERY, SEPTEMBER, 1853. No. 9.

PREMIUM LIST
OF THE SOUTHERN CENTRAL AGRICULTURAL SOCIETY.

To be held in Augusta, the 17th, 18th, 19th, 20th, 21st and 22d October, 1853.

Present—Col. P. M. Nightingale, chairman, Baker co.; R. Peters, Esq., Atlanta; Col. James M. Davidson, Woodville; Benj. E. Stiles, Esq., Macon; D. W. Lewis, Secretary of the Society and ex-officio member of the Executive Committee, Sparta, Ga.

After arranging with the city authorities of Augusta for the Fair Grounds, &c., and disposing of other preliminaries not especially interesting here, the Premium List for the Fair of 1853 was then taken up, and after some discussion, it was—

Resolved, That the Premiums for Essays be omitted for one year, or until such time as the Society shall be able to publish those now in possession of the Society.

The entire list of Premiums was then renewed, amended and adopted, as follows:

THE PLANTATION AND FARM.

FIELD CROPS.

1. For the largest crop of cotton produced upon one acre of upland, with the mode of cultivation, the amount and kind of manure used, the period of planting, the number of times plowed and hoed, the kind of cotton; the land to be measured, and the cotton weighed in the presence of three disinterested and reliable witnesses, with certificate from them, pitcher, $50 00
2. For or the largest crop of cotton produced upon one acre of low land, (the same requisition as upon an acre of upland,) 50 00
3. For the largest Pea Vine Hay, one bale to be sent as a sample, with a certificate of quality made, silver cup, 20 00
4. For the largest crop of Native Grass Hay, the same as above, 20 00
5. For the largest crop of Foreign Grass Hay, the same as above, 20 00
6. For the largest crop of Corn grown upon one acre of upland, not less than 75 bushels; the period of planting, the mode of cultivation, kind of corn, times plowed and hoed, the amount and kind of manure applied; the land and corn measured in the presence of three disinterested and reliable witnesses, with their certificates—a silver pitcher worth 20 00
7. For the largest crop of Corn grown upon one acre of low land, not less than one hundred bushels per acre, (requisition as upon upland corn,) 50 00
8. For the largest crop of Wheat (broadcast) grown upon 1 acre of land, not less than 20 bushels per acre, nor under 60 pounds per bushel; the land and wheat to be measured, and under the same requisition in all things as above, 25 00
9. For the largest crop of Wheat (drilled) grown upon one acre of land, not less than 20 bushels per acre, nor less than 60 pounds per bushel, (requisition the same as upon the above,) 25 00
10. For the largest crop of lowland Rice, on one acre, not less than 100 bushels, 50 00
11. For the largest crop of Oats, kind, &c, raised per acre, 20 00
12. For the largest crop of Rye, kind, &c., raised per acre, 10 00
13. For the largest crop of Barley, kind, &c., raised per acre, 10 00
14. For the largest crop of Sweet Potatoes raised per acre, one-eighth of an acre to be dug, and certificates of the yield by disinterested persons furnished, 20 00
15. For the largest crop of Irish Potatoes raised per acre, 20 00
16. For the largest crop of Turnips raised per acre, 10 00
17. For the largest crop of Ground Peas, or Pindars, raised per acre, 10 00
18. For the largest crop of Field Peas raised per acre, 10 00

19. Best box of Chewing Tobacco, Southern raised, 5 00
20. Best box of Cigars from Southern raised Tobacco, 5 00
21. Best sample of Southern raised Smoking Tobacco, 5 00

Exhibitors of all the above crops must state in writing, in full, to the Secretary, all the requisitions as laid down for Corn, Cotton, &c., as above, when the articles are entered upon his books for exhibition, with the witnesses' certificates for the measurement of lands and pounds, and bushels per acre; without which the Judges will be required to withhold their awards, and exhibitors not complying with these requisitions will not be allowed to compete for the Premiums of the Society.

SAMPLE OF FIELD CROPS.

1. For the best and greatest variety of the different kinds of Corn, which must be raised and exhibited by the same individual, with two or more specimen ears of each kind, $10 00
2. For the best and greatest variety of the different kinds of Wheat raised and exhibited by the same individual, with twelve kinds of each sample in the year 10 00
3. For the best and greatest variety of the Sweet Potatoe, half bushel of each kind, collected by any individual from a single county in this State or from any one county in an adjoining State, 10 00
4. For the best and greatest variety of the Field Pea, raised and exhibited by the same individual, (sample) one peck of each kind, 10 00
5. For the best and greatest variety of Upland Cotton, raised and exhibited by the same individual; two samples of each kind in stacks, 10 00
6. For the best samples of Sea Island Cotton, in stalk, 10 00
7. For the best one bushel of Corn, with six or more (sample) ears, 5 00
8. For the best one bushel of Wheat, with 12 or more (sample) ears, 5 00
9. For the best bushel of lowland Rice, clean, 5 00
10. " " " " Oats, 5 00
11. " " " " Rye, 2 00
12. " " " " Barley, 5 00
13. " " " " Field Peas, most profitable for general cultivation, 5 00
14. For the best bushel of Ground Peas, 3 00
15. For the best bushel of Sweet Potatoes for general use, 5 00
16. For the best bushel of Irish Potatoes for general use, 5 00
17. For the best and greatest variety of field, including grass seeds, raised and exhibited by one individual, and adapted to the South, cup, 10 00

Exhibitors of crops, must give in writing to the Secretary a full account of each crop offered—its adaptation for profitable cultivation, &c. Exhibitors of Hay must give the mode of cultivating, curing, harvesting, &c.

COTTON BALES.

For the best 20 bales of Upland Cottons, $20 00
" " 10 " " " 15 00
" " 5 " " " 10 00
" " 1 " " " 5 00
" " 5 " " " Sea Island Cotton, 20 00

The Cotton must be on the Fair Ground during the Exhibition, to claim the premium.

DOMESTIC ANIMALS.

CATTLE.

[In all cases where the word "Imported" is used, it is understood that the animal must be brought from beyond the limits of the United States.]

FIRST CLASS—DEVONS.

For the best Bull 3 years old, or upwards, $20 00
" " " 2 to 3 years old, 15 00
" " " 1 to 2 " " 10 00
" " Cow 3 years old, or upwards, 10 00
" " Heifer 2 to 3 years old, 10 00
" " " 1 to 2 " " 8 00

SECOND CLASS—DURHAMS, OR SHORT HORNS.

For the best Bull 3 years old, or upwards, $20 00
" " " 2 to 3 years old, 15 00
" " " 1 to 2 " " 10 00
" " Cow 3 years old, or upwards, 10 00
" " Heifer 2 to 3 years old, 10 00
" " " 1 to 2 " " 8 00

THIRD CLASS—AYRSHIRES.

For the best Bull 3 years old, or upwards, $20 00
" " " 2 to 3 years old, 15 00
" " Cow 3 years old, or upwards, 10 00
" " Heifer 2 to 3 years old, 10 00
" " " 1 to 2 " " 8 00

FOURTH CLASS—ALDERNEYS.

For the best Bull 3 years old, or upwards, $20 00
" " " 2 to 3 years old, 15 00
" " " 1 to 2 " " 10 00
" " " Cow 3 years old, or upwards, 10 00
" " " Heifer 2 to 3 years old, 10 00
" " " " 1 to 2 " " 8 00

GRADES.

For the best milking Cow of mixed breed, $20 00
" " " " native " 25 00
" " imported Bull of any Bull not included in the above classes, 20 00
" " " Cow " " 10 00

WORKING OXEN.

For the best single yoke of Oxen, working qualities to be tested on the Fair Grounds, $20 00

FAT CATTLE.

For the best lot of fat Steers, $10 00
For the best single fat Steer, $5 00
" " fat Cow, 5 00
" " fat Heifer, 5 00
" " fat spayed Heifer, 10 00

HORSES.

FIRST CLASS—HORSES OF ALL WORK.

For the best Stallion over 4 years old, $20 00
" " " " 3 " " 10 00
" " " " 2 " " 5 00
" " " Horse Colt, over 6 months old, 5 00
" " " Brood Mare, with colt by her side, 20 00
" " " Filly, 3 years old, 8 00
" " " " 2 " " 5 00
" " " " 1 year old, 5 00

SECOND CLASS—HEAVY DRAFT HORSES.

For the best Stallion over 5 years old, $20 00
" " " " 3 " " 10 00
" " " " 2 " " 5 00
" " " " 1 year old, 5 00
" " " brood Mare with Colt by her side, 20 00
" " " Filly 3 years old, 10 00
" " " " 2 " " 5 00
" " " 1 year old, 5 00

THIRD CLASS—BLOOD HORSES.

For the—	
Best large, thorough-bred Stallion, 4 years old,	$20 00
" " " " 3 " "	10 00
" " " " 2 " "	8 00
" " Horse Colt, 1 year old,	5 00
" " thorough-bred brood Mare with Colt by side,	20 00
" " thorough-bred Mare, 3 years old,	10 00
" " " " Filly, 2 " "	5 00
" " " " " 1 year old	5 00

FOURTH CLASS—MORGAN, CANADIAN AND IMPORTED HORSES.

For the most thorough bred Morgan Stallion, with pedigree, and certificate of his purity on the side of sire and dam, where and by whom raised; (if his history and certificates are not entirely satisfactory, the premium will not be awarded, and the Judges required to reject him.)	$50 00
For the best and largest Canadian Stallion, with certificate of purity, &c.,	25 00

FIFTH CLASS—MATCHED AND SINGLE HORSES.

For the best pair of matched Horses raised in Georgia,	$25 00
" " single harness Horse do do	15 00
" " saddle Horse do do	15 00
" " heavy draft Horse, (gelding,) raised in Georgia,	15 00

Southern Raised.

For the—	
Best pair of Matched Horses, Southern raised,	$15 00
Best single Harness Horse, " "	10 00
Best Saddle Horse, " "	10 00
Best pair of Matched Horses—open to the world—	20 00

JACKS AND JENNETTES.

Imported.

For the—	
Best and largest imported Jack, with certificates, approved by the Society,	$30 00

Southern Raised.

For the—	
Best and largest Jack,	$25 00
Best and largest Jennette,	20 00

MULES.

Georgia Raised.

For the best pair of Mules,	$20 00
For the best single or harness Mule,	10 00
For the best Mule two years old,	5 00

Southern Raised.

For the best pair of Mules,	$20 00
For the best single or harness Mule,	10 00
For the best Mule, 2 years old,	5 00

For the exhibition and trial of animals, a large circle will be enclosed with railing, within the Fair Ground. Exhibitors of Stallions and Jacks should always accompany them to the Fair with some of their colts—which are always the best evidence of the merits of the sire.

SHEEP.

FIRST CLASS—IMPORTED MERINOES.

For the best Buck, 2 years old,	$20 00
Buck, 1 year old,	10 00
pen of Ewes, (not less than 2) 2 y'rs,	20 00
pen of Ewe Lambs, not less than two,	10 00

SECOND CLASS—SAXONS.

For the best Buck, 2 years old,	$10 00
Buck, 1 year old,	5 00
pen of Ewes, (not less than 3,) two years old,	10 00

THIRD CLASS—MUTTON SHEEP, SOUTH DOWNS.

For the best Buck, 2 years old,	$10 00
Buck, 1 year old,	5 00
pen of Ewes, (not less than 3,) two years old,	10 00
pen of Ewe Lambs, not less than 3,	5 00

FOURTH CLASS—LONG WOOLS.

For the best Buck, 2 years old,	$10 00
Buck, 1 year old,	8 00
pen of Ewes, (not less than 3,) two years old,	5 00
pen of Ewe Lambs, not less than 3,	5 00

FIFTH CLASS—NATIVES AND GRADES.

For the best pen of Ewes, (not less than three,) 2 years old,	3 00
pen of Ewe Lambs, (not less than 3,) 2 years old,	3 00
Foreign Buck and Ewe of any breed, not included in the above class, each,	10 00
For the best samples of Wool from each of the above classes, not less than 5 fleeces in one package,	5 00

SIXTH CLASS—FAT MUTTON.

For the best lot of fat Wethers, not less than 3,	5 00
lot of fat Lambs, not less than 3,	3 00

CASHMERE, THIBET OR PERSIAN GOATS.

For the best thorough-bred Buck,	$20 00
thorough-bred Ewe,	10 00
pair of grades, or crosses upon our native stock,	10 00

SHEPHERDS' DOG.

For the best Dog, with evidence of his training,	5 00
Slut, with evidence of her training,	5 00

SWINE.

FIRST CLASS—SUFFOLKS.

For the best Boar, 2 years old or over,	$10 00
Boar, 1 to 2 years old,	10 00
Boar, 6 months, and under one year old,	5 00
Sow, 2 years old, or upwards,	10 00
Sow, 1 to 2 years old,	10 00
Sow, 6 months, and under 1 year old,	5 00
lot of Pigs, not less than 7, under 6 months old,	10 00
lot of fat Suffolks, not less than 5,	5 00

SECOND CLASS—GRAZIERS.

For the best Boar, 2 years or over,	$10 00
Boar, 1 to 2 years old,	10 00
Boar, 6 months, and under 1 year old,	5 00
Sow, 2 years old,	10 00
Sow, 1 to 2 years old,	5 00
Sow, 6 months, and under 1 year old,	5 00
lot of Pigs, not less than 7, under 3 months old,	10 00
lot of fat Hogs, not less than 5,	10 00

THIRD CLASS—BERKSHIRES.

For the best Boar, 2 years old or over,	$10 00
Boar, 1 to 2 years old,	$10 00
Boar, 6 months, and under 1 year old,	5 00

Sow, 2 years old,	10 00
Sow, 1 to 2 years old,	10 00
Sow, 6 months, and under 1 year old,	5 00
lot of Pigs, not less than 7, under 3 months old,	10 00
lot of fat Hogs, not less than 5,	10 00
For the largest and fattest Hog raised in Georgia,	$10 00

Exhibitors of Cattle, Sheep and Swine will be required, under a rule of the Society, in all cases, to deposit with the Secretary, when the animal is entered for exhibition, a full written statement of the history, breed and age of his animal, when practicable; the system of feeding and fattening; the feed consumed, in quality, quantity and value; date when the feeding commenced; the weight of the animal when entered for feeding, and its increased weight up to the day sent for exhibition.

POULTRY.

Best pair of Shanghai Fowls, of any color,	$10 00
Cochin China,	10 00
Southern raised Dorkings,	5 00
Chittagong,	5 00
Java, Malay, or other large breeds,	5 00
Game Fowls,	5 00
Sebright Bantams,	5 00
Chinese Pheasants,	5 00
Wild Turkeys,	5 00
Common Turkeys,	3 00
Wild Geese,	5 00
African, or Hong Kong Geese,	5 00
Chinese Geese,	5 00
Muscovy Ducks,	3 00
Aylesbury Ducks,	3 00
Common Ducks,	2 00
lot of Capons,	5 00
Largest, best and greatest variety of Poultry exhibited and raised in the South by one individual,	50 00

In awarding premiums in this department, the Commissioners will, in all cases, give the preference to pure bred fowls, raised in the South; and will require from exhibitors written statements of the correct ages, weights, &c., of the specimens exhibited. The actual weight will determine size, when the contending samples are equal in point of form, age, &c. No "cross-bred," mongrel or impure fowls will be allowed to enter for any premium of this Society.

PIGEONS.

Best collection of Fancy Pigeons, a silver Pitcher worth	$50 00

Twenty-five dollars to be paid by the Society in addition to twenty-five already subscribed by individuals.

BEES.

Greatest yield of Honey from one swarm of Bees, with full a count of management, protection against the moth, &c. The Honey to be shown upon the Fair Ground, and the quantity duly certified to,	$10 00

PORK, BACON AND BEEF.

For the best half-barrel Pickled or Mess Pork,	$5 00
half-barrel Pickled or Mess Beef,	5 00
Bacon Ham, regardless of age,	5 00
half doz. Sides, regardless of age,	5 00
half dozen Shoulders, regardless of age,	3 00
cured Mutton Hams,	5 00

Exhibitors must state in full to the Secretary the mode of pickling the Pork and Beef, and curing and preserving the Bacon.

HOME DEPARTMENT.

DAIRY.

For the best jar of fresh Butter, Georgia made, not less than 10 lbs.,	$10 00
firkin of Butter 6 months old, not less than 20 lbs.,	10 00
new Chinese, Southern made,	10 00
new Chinese, Southern made, twelve months old,	10 00

The process of making and preserving the butter and cheese to be given in full, by the exhibitor, to the Secretary, as before-mentioned.

HOUSEHOLD DEPARTMENT.

For the best jar of leaf Lard, 80 lbs.,	$5 00
box of Hard Soap, home-made, 20 pounds,	5 00
10 lbs. of Soft Soap, home-made,	3 00
box of bar Soap, Southern made,	5 00
and largest collection of fine Soaps, Southern made,	10 00
loaf of Light-Bread,	2 00
sample of Rolls,	2 00
Sponge Cake,	2 00
Fruit Cake,	3 00
Plain Cake,	2 00
Corn Bread,	5 00
Ham, boiled with skin on,	2 00
samples of Jellies, Preserves, Pickles, Jams, Catsups, Syrups, Cordials, &c., with full description of the process of making, preserving, and keeping, for each sample,	2 00
half-bushel Dried Apples, Peaches, Pears and Quinces, each,	3 00
drum of dried Figs, Southern raised, and sample of preserved Dates and pickled Olives, each,	5 00
sample of Southern made Olive Oil,	5 00
and largest exhibition of Jellies, Preserves, Pickles, Jams, Catsups, Syrups, Cordials, &c., made and exhibited by the same individual,	15 00
the best box Soda, Lemon, Butter, Sugar and Wine Biscuits manufactured from Southern flour, each,	2 00

SOUTHERN DOMESTIC MANUFACTURES.

For the best pair of Woolen Blankets,	10 00
pair Cotton Blankets,	10 00
10 yards (negro) Woollen Cloth,	5 00
40 yards Woollen Carpeting,	10 00
best Hearth Rug, Woollen,	3 00
Rag Carpeting, Woollen,	5 00
20 yards of Stair Carpeting,	5 00
Coverlet of wool or mixed,	5 00
Cotton Comforts for negroes,	5 00
For the best pair of Woollen Socks or Stockings,	1 00
10 yards Jeans, woollen,	5 00
10 yards home-made Linen-Shirting,	5 00
10 yards home-made Linen Diaper,	5 00
10 yards Jeans, cotton,	5 00
Coverlet of Cotton, or mixed,	5 00
Socks, or Stockings, of linen,	1 00
Socks, or Stockings, of cotton,	1 00
pound of linen Sewing Thread,	5 00
pound of cotton Sewing Thread,	1 00

SILK.

For the best specimen of Sewing Silk,	$2 00
specimen of Reeled Silk,	2 00

specimen of half bushel of Cocoons,	3 00
Stockings, or half hose,	2 00
Handkerchief or Shawl,	5 00
specimens of Silk and Wool Cloth, 8 yards,	5 00
specimens of Silk and Cotton Cloth, 8 yards,	5 00

NEEDLE, SHELL AND FANCY WORK.

Knitting, Netting, and Crotchet, in Thread.

For the best Collar and Chemisette,	$5 00
Undersleeves,	3 00
Handkerchief,	3 00
Morning Cap,	1 00
Infant's Cap,	1 00
Infant's Waist,	1 00
Child's Hat,	3 00
Child's Socks,	1 00
Cradle Quilt,	5 00
Counterpane,	10 00
Fringe and Lace,	5 00
"Tidy,"	3 00
Bonnet,	5 00
Cape, (Berthe)	3 00
Shawl,	5 00

French Needle Work.

For the most beautiful Collar and Chemisette,	$5 00
Undersleeves,	3 00
Handkerchief,	3 00
Morning Cap,	1 00
Shawl,	6 00
Mantle,	3 00

Patch Work in Cotton, &c.

For the best patch work Quilt in Cotton,	$10 00
patch work Quilt in Silk,	10 00
raised work Quilt,	10 00
imitation of Marsailles,	10 00
woven Counterpane, (Georgia made,)	10 00
Cloak and Mantle,	5 00

Raised Worsted Work—Framed Tapestry Work, &c.

For the best Piano Cover, (raised work,)	$10 00
Table Cover, raised work,	5 00
Chair Cover, raised work,	2 00
Ottoman Cover, raised work,	3 00
Footstool Cover, raised work,	2 00
Hearthrug, raised work,	5 00
Pair of Fire Screens, raised work,	3 00
Lamp or Vase Mat,	2 00

Embroidery in Silk Floss, Chain Stitch or Braid.

For the best Lady's Dress,	$5 00
Lady's Shawl,	5 00
Lady's Mantle,	3 00
Lady's Scarf or Neck Tie,	1 00
Lady's Apron,	1 00
Lady's Vest,	2 00
Child's Dress,	1 00
Child's Sack or Spencer,	1 00
Cloak,	1 00
Lady's Reticule,	1 00
Fire Screens,	2 00
Portfolio, (embroidered,)	2 00

Knitting, Netting or Crotchet, in Crewel or Silk.

For the best Piano Cover,	10 00
Table Cover,	5 00
Ottoman Cover,	3 00
Shawl,	5 00
Scarf for neck,	3 00
pair of Undersleeves,	3 00
Head Dress,	3 00
Child's Hat or Cap,	2 00
Child's Spencer or Sack,	2 00
Counterpane,	10 00
Cradle Quilt,	5 00
Reticule,	2 00
Purse,	1 00
Gloves,	2 00
Hose, long or short,	5 00
Child's Socks,	1 00
Lamp or Vase Mat,	2 00

Spanish or American Needle Work.

For the best Collar and Chemisette,	$5 00
Undersleeves,	3 00
Handkerchief,	2 00
Berthe Cape,	3 00
Child's Dress,	2 00

Straw or Similar Fabrics.

For the best Bonnets, Hats or Caps, each,	$3 00

Wax and Shell Work.

For the best Wax Work in fruit and flowers,	$5 00
specimen of Shell Work,	5 00

—

MANUFACTURING IN THE SOUTH.

Southern Manufactures other than Domestic.

For the best bale Osnaburgs, 8 ounces to the yard,	$10 00
Shirting,	10 00
Sheetings,	10 00
Kerseys,	10 00
Stripes,	10 00
Plains,	10 00
Bed Ticking,	5 00
double Cotton Mattress,	5 00
double Shuck Mattress,	5 00
double Moss Mattress,	5 00
double Hair Mattress,	10 00
coil Hemp Rope, Southern manufacture,	10 00
coil Cotton Rope, Southern manufacture,	10 00
coil Bear Grass Rope, Southern manufacture,	5 00
coil Plow Lines, Southern manufacture,	5 00
and greatest variety of Cotton Cordage,	10 00
Wrapping Twine,	5 00
sample Cotton Bolting,	10 00
sample Cotton Sacking,	5 00
bale Cotton Yarns, comprising all the Nos.	10 00
piece of Bagging, made of Cotton,	10 00
piece of Bagging, made of Long or Southern moss,	10 00
piece of Cashmere, Southern manufacture,	10 00
piece of Plains, Southern manufacture,	5 00
piece of Satinetts, Southern manufacture,	5 00
piece of Lindseys or Kerseys, Southern manufacture,	5 00
piece of Serge, Southern manufacture,	5 00
case of Bleached Cotton Goods,	20 00
piece of Plain Flannel, Southern manufacture,	5 00
piece of Twilled Flannel, Southern manufacture,	5 00
bale of Blankets, Southern wool and of Southern manufacture,	20 00

piece of Broadcloth,	20 00
piece of Carpeting.	20 00

MUSICAL INSTRUMENTS.

For the best Piano, Southern made,	$25 00
Violin, Southern made,	5 00
Flute, Southern made,	10 00

THE ORCHARD AND NURSERY.

FRUITS.

For the best 100 Oranges, open culture, grown at the South,	$5 00
one dozen Pine Apples, grown at the South,	5 00

APPLES.

For the best and largest variety of Table Apples,	10 00
and largest collection of Southern Seedling Apples, each variety named and labeled,	10 00
late Seedling Apple, for all purposes, with description of the tree, history of its origin, keeping, &c., one dozen apples to be exhibited,	5 00

PEARS.

For the best and largest variety of Pears,	$10 00
and largest collection of Southern Seedlings,	8 00
single Seedling, for all purposes, with description of the tree, history, &c., half-dozen specimens to be exhibited,	5 00

PEACHES, &c.

For the best collection of Seedling, process of keeping, &c.,	$10 00
collection of Quinces,	5 00
collection of Native Grapes, with history of keeping, preserving, &c.,	10 00
dozen specimens of the Lime, Lemon, or other Southern fruits not named above, each,	5 00

FRUIT TREES, &c.

For the largest collection of Southern Seedling Apple Trees, each variety described and labelled,	$20 00
and best collection of Peach Trees, each variety described and labelled,	20 00
and best collection of Pears, described and labelled as above,	20 03
greatest variety and best collection of Strawberry Plants,	5 00
greatest variety and best collection of Raspberry Plants,	5 00

HEDGE PLANTS.

For the largest collection of Osage, Orange, or other Plants, (Georgia raised,) with a description of the best method of planting, trimming and training the hedge,	$20 00
best collection of Osier or Basket Willow Plants or Cuttings,	20 00

FLORICULTURE.

AMATEUR LIST.

For the best collection of Green-house Plants exhibited by one person,	20 00
finest collection of Dahlias,	3 00
finest collection of Seedling Varieties, each,	3 00
finest collection of Roses,	10 00
finest collection Phloxes,	2 00
best collection Verbenas,	5 00
best collection Asters,	2 00
most beautiful Boquet,	3 00
most beautiful Flowers,	2 00
best Boquet for centre table,	2 00

HORTICULTURE.

For the best and greatest variety of garden Vegetables for table use, raised by one individual,	$50 00
For a new and valuable variety of Vegetable, with evidence of its superiority,	5 00
For the best and largest collection of Garden Seeds, raised and exhibited by one individual, and best for Southern Horticulture, a premium cup, worth	10 00

RECLAIMING LAND.

For the best and most economical method (based on actual experiment) of recuisitating the wornout land of the South by a system of turning under green crops, liming, or otherwise,	$25 00

FINE ARTS.

For the best Historical Painting, (in oil,) connected with the history of Georgia,	$20 00
specimen of Animal Painting, (in oil,) from nature,	20 00
specimen of Southern Landscape Painting, from nature, (in oil.)	20 00
specimen of Fruit Painting,	5 00
specimen of Fancy Painting,	5 00
specimen of Water Colors,	5 00

No premium will be awarded in this Department unless the specimens on exhibition are considered really meritorious by competent Judges.

PLOWING MATCH.

For best plowing by white man,	$5 00
plowing by slave,	5 00
plowing by white boy, 13 to 16 years old,	5 00
plowing by negro boy, 13 to 16 years old,	5 00

The Plowing Match will come off during the Fair. Grounds will be prepared for the same, and entrance open to horses, mules and oxen.

Judges in this department will be governed in their awards by the depth and width of the furrow slice turned by the plow of each competitor, and the time employed to complete his work.

Plows must be deposited at the Secretary's office on the first day of the Fair. Those of Southern invention and manufacture, if of equal merit, to have precedence.

In the department of the Dairy, Household, Silk, Domestic Manufacture, Needle and Shell Work, Flowers, &c., the Society have determined to award for the future, silver cups; tea, preserve, cream and salt spoons; butter tubs; butter, fruit, pie, fish, dessert and pickle knives; forks; cream, soup and sugar ladles; tongs and sugar sieve; cheese scoops; flower vases; dessert and sugar baskets; gold thimbles and pencils; knitting needles; napkin rings, work cases, &c., for all sums under $15.

THE WORKSHOP, LABORATORY, &C.

MECHANICAL PREMIUMS.

SOUTHERN FARMING IMPLEMENTS.

For the best Side Hill Plow,	$10 00
double mould board plow,	10 00
cast mould board one horse Plow,	10 00
cast mould board two horse Plow,	10 00
wrought iron one horse mould board Plow,	10 00
wrought iron two horse mould board Plow,	10 00
wrought iron subsoil Plow,	10 00
wrought iron cotton scraper Plow,	5 00
wrought iron Sweep,	5 00
wroughs iron Toothed Harrow,	5 00
Turning Plow or Rooter stock,	10 00

Simplicity of construction not detracting from the efficiency of the article, will be viewed as the greatest merit.

Best Southern Road Wagon,	$10 00
two horse Wagon,	$10 00
Dump Cart, one horse,	5 00
Ox Cart,	5 00
Farm Gate and Hinges,	5 00
moveable Horse Power,	10 00
Harness and Collar for plantation use,	2 00
Thresher,	10 00
Fan,	5 00
Straw Cutter,	5 00
Corn and Cob Crusher,	5 00
Corn Sheller,	5 00
Grain Cradle,	5 00
Seed Planter,	5 00
Vegetable Cutter,	3 00
Cotton Gin, open to the world,	30 00
Cotton Press, open to the world,	20 00
Stocked Plow, offered by a slave, with certificates from his master or overseer,	5 00
Best and largest lot of Agricultural and Horticultural Implements,	20 00
Club Axe,	1 00
Broad Axe,	1 00
Drawing Knife,	1 00
Manure Fork,	1 00
Portable Work Bench, with full sett of Plantation Carpenters' Tools,	10 00

MACHINERY.

Best Steam Engine for Agricultural purposes, at work on ground.	$50 00
Best Improved Grist Mill,	10 00
Best plantation Saw Mill by steam, water, or horse power,	20 00
Best Railroad Passenger Car,	10 00
Best Railroad Freight Car,	10 00
Best Fire Engine,	10 00
Best Lathe for Metal,	5 00
Best Gin Saw Filing Machine,	5 00
Best Steam Boiler,	10 00
Best Rope Twisting Machine, for plantation use,	10 00

MANUFACTURES IN WOOD AND IRON.

Best Secretary and Book Case, Southern wood,	$10 00
Best Sideboard and Beaureau, Southern wood,	5 00
Best Sofa, Southern wood,	5 00
Best Bedstead, Southern wood,	5 00
Best sett fine Chairs,	5 00
Best sett common Chairs,	3 00
Best Invalid Chair,	5 00
Best Dining Table,	3 00
Best Tin or Wire Safe,	5 00
Best Kitchen Table, with shelves and drawers,	5 00
Best Window Sash and Blinds, each,	5 00
Best Panel Door,	5 00
Best dozen Cedar, Cypress, Juniper and Pine Buckets, each,	2 00
Best dozen Cedar, Cypress, Juniper and Pine Tubs, each,	5 00
Best nest of Osier or Willow Baskets,	5 00

Best dozen Broom Corn and Wire-grass Brooms, each,	2 00
Best Blacksmith's Bellows, for plantation use,	10 00
Best Rifle Gun, Southern make,	10 00
Best double-barreled Gun, or Fowling-piece, Southern manufacture,	10 00
Best and largest exhibition of boot and shoe Lasts,	5 00
Best Pegs and Bristles,	5 00
Best horn, bone and wooden buttons,	5 00
Best close family Carriage, combining convenience, safety and lightness, Southern make,	20 00
Best Buggy,	5 00
Best and largest exhibition of Mechanics' Tools,	10 00
Best and largest exhibition of Iron Castings,	10 00
Best specimen of Bar and Round Iron,	10 00
Best Saw Mill Irons,	5 00
Best Grist Mill Irons,	5 00
Best and most approved Railroad Bar Iron,	5 00
Best sett Blacksmith's Tools,	5 00

MANUFACTURERS OF LEATHER.

Best and most useful Carriage Harness,	$10 00
Best and most useful Buggy Harness,	5 00
Best and most useful Wagon Harness,	5 00
Best and most useful Saddle and Bridle,	5 00
Best dozen Brogans,	10 00
Best pair of Boots,	5 00
Best half dozen pair gents' Shoes,	5 00
Best half dozen ladies' Shoes,	5 00
Best traveling Trunk and Valise, each,	3 00
side Upper, Sole and Harness Leather, each,	2 00
dozen Calf Skins,	5 00
side of oil dressed Whang Leather,	3 00
dozen dressed Sheep Skins,	3 00
dozen dressed Goat Skins,	3 00
specimen of plantation tanned Leather, for plantation uses,	10 00

CHEMICAL MANUFACTURES, OILS, CEMENTS, MINERALS, &c.

For the best case or chest of genuine Medicine, suitable for family use, and the Southern practitioner, silver cup,	10 00
specimen of sold pressed Castor Oil,	2 00
specimen Linseed, Lard and Cotton Seed Oil, each,	2 00
bag of Salt,	2 00
bbl. of Spirits of Turpentine,	5 00
bbl. of Rosin,	3 00
bbl. of Tar,	2 00
specimen of Lime, Gypsum, Water Cement, and Pearl Ash, each,	2 00
specimen of Southern made Paint, of Southern materials, different colors, mixed, applied and dry,	10 00
French Burr Mill Stones, Southern manufacture,	10 00
Oil Stone,	1 00
bushel Bituminous and Anthracite Coal, each,	5 00
marble Monument and Mantel Piece, each,	5 00
and largest exhibition of Stone Ware,	5 00
Window Plate and Hollow Glass,	5 00
specimens of Fire Brick,	3 00
Georgia Mill Rock for grinding Indian Corn,	10 00

CLOTHING, &c.

For the best suit Clothes made at the South, to consist of Over-coat, Dress-coat, Vest and Pants, silver cup,	$10 00
suit Clothes made at the South, and of material manufactured at the South, to consist of Great-coat, Dress-coat, Vest and Pants, silver cup,	10 00
Gent's Hat, manufactured at the South, silver cup,	10 00
dozen Negro Hats, manufactured at the South, silver cup,	5 00

The Seventh Annual Fair of the Southern Central Agricultural Society will be held in Augusta, Ga., on the 17th, 18th, 19th, 20th and 21st October, 1853.

The Society have offered premiums to the amount of $5000, embracing nearly everything valuable in Agricultural and Mechanical Industry, Art and Science and Taste. The premium list will be furnished by application—postage paid—to the Secretary, or to the Cultivator office, or Soil of the South.

REGULATIONS OF THE FAIR, &C.

Persons paying $2, and registering their names, shall become Members of the Society for one year, and be furnished with a badge that will admit them, at all times during the Fair, to the Buildings and Grounds of the Society.

All persons paying $1 shall be entitled to exhibit their articles or animals upon the Grounds of the Society, and be furnished with a ticket admitting them within the enclosure at all times during the Fair week.

On Tuesday of the Fair week the public will be admitted by tickets at $1 each, said tickets to be delivered to the Gate Keeper on entering. On Wednesday, Thursday and Friday, the public will be admitted by tickets, at twenty-five cents each, to be delivered at the gate as above.

All children under 12 years of age will be admitted at half price.

The pupils of Charitable Institutions, with their preceptors, will be admitted FREE.

All Editors in the Southern States will be furnished with a badge and admitted to the privilege of Membership; and their families will also be admitted free to the Fair of 1853.

Other State Agricultural Societies and Institutes are requested to send Delegates to the next Annual Fair of this Society, to be held at Augusta, in Oct., 1853. Such Delegates will be presented with a badge which will entitle them to the privilege of the Grounds.

RULES FOR EXHIBITORS.

SPECIAL NOTICE.

The Secretary's office will be opened at Augusta, on the 10th of October, for the purpose of receiving entries.

Persons intending to become exhibitors, at the next Fair, are desired to forward to the Secretary, D. W. LEWIS, Augusta, Georgia, after the 1st of October, their entries; which will greatly facilitate business, and prevent confusion in the halls and on the grounds of the Society, and disappointment to exhibitors, which, heretofore, has been the result chiefly of delay.

All exhibitors at the Fair must pay $1 and have their animals or articles entered at the Secretary's office before taking them into the enclosure. All who intend to compete for the premiums of the Society, must have their articles on the ground and entered at the Secretary's office, at or before 5 o'clock, on Saturday evening, the 15th of October, without fail, so that they may be arranged in their respective departments, and in readiness for examination by the Judges on Tuesday morning, the 18th of October, at 9 o'clock. Animals may be entered at any time previous to 9 o'clock, on Tuesday morning.

The regulations of the Society must be strictly observed by exhibitors, otherwise the Society will not be responsible for the omission of any article or animal not entered under its regulations.

No article or animal entered for a premium can be removed or taken away before the close of the Exhibition. No premium will be paid on animals or articles removed in violation of this rule. All articles and animals entered for exhibition must have cards attached, with the number as entered at the Secretary's office; and exhibitors, in all cases, shall obtain their cards previous to placing their articles or animals on the Fair Grounds.

All persons who intend to offer animals for sale during the Fair, shall notify the Secretary of such intention at the time of entry.

Special attention is required from competitors to the requisitions of the Society upon Field Crops, Fat Cattle, Hogs and Sheep, Dairy and Household Department, Pork, Bacon and Beef; for full written statements as required under each department, as they are important to the Judges in the several classes before their final decision.

The Executive Committee will take every precaution in their power for the safe preservation of all articles and stock on exhibition, and will be responsible only for loss or damage that may occur during the Fair. They desire exhibitors to give attention to their articles, and at the close of the Exhibition to attend to their removal.

INSTRUCTION TO THE JUDGES.

AND THE SUPERINTENDENTS OF THE DIFFERENT DEPARTMENTS.

The Chairman of Committees selected for the next annual Fair are requested to report themselves to the Secretary upon the grounds of the Society, on Monday morning, October 17, 1853.

In no case must the Judge award a special or discretionary premium.

The Judges on animals will have regard to the symmetry, early maturity, thorough breeding, and characteristics of the breeds which they judge. They will make proper allowances for the age, feeding, and condition of the animals, especially in the breeding classes. They are required not to give encouragement to over-fed animals.

No stock of inferior quality shall be admitted within the Grounds; and if any shall by accident be admitted, a committee shall be appointed to examine and rule out of the Grounds all below a medium grade.

The animals to which premiums shall be awarded, shall be led up for exhibition at the delivery of the premium, and so with other articles as may be convenient, and after or before the delivery of the premium, each animal which shall have taken a premium, shall be designated by some badge of distiction, and led into the ring and around it for exhibition of its superiority and high quality to the assembled crowd.

N. B. No person whatever will be allowed to interfere with the Judges during their adjudication; and any person who, by letter or otherwise, attempts an interference or bias from misrepresentations with the Judges, will be excluded as an honorable competitor.

The Superintendents will give particular direction to all articles in their respective departments, and see that all are arranged as near as may be in numerical order, to lessen and facilitate the labors of the Judges in their examinations.

The Superintendents will attend each set of Judges in their respective departments, point out the different articles or animals to be exhibited; will attach prize cards to the articles, or flags to the successful animals, after the Judges' reports shall have been made up and delivered to the Secretary.

REPORTS OF JUDGES.

The Judges will be expected, in all cases, to withhold premiums when the article or animal is not worthy, though there be no competition.

Animals having received premiums of the Society at previous exhibitions, will not be allowed to compete for prizes again in the same class.

FORAGE FOR STOCK.

There will be a Forage Master on the ground, who will furnish grain and forage at market price, to the owners of stock.

Stalls will not be furnished upon the Grounds of the Society for unruly or dangerous animals.

ANNUAL ADDRESS.

The Annual Address before the Society will be delivered at the public stand, at 11 o'clock on Thursday morning, by Rev. George F. Pierce, D. D., of Oxford, Georgia.

AWARD OF PREMIUMS.

The premiums will be awarded from the Executive stand, at ten o'clock on Friday morning.

SALES OF STOCK.

The auction sale of live stock will take place on Wednesday, at 11 o'clock A. M., but the animals sold cannot be removed from the grounds until the close of the exhibition.

POLICE.

A well regulated Police of the Society, aided by that of the city of Augusta, will be on the grounds during the entire exhibition, to preserve order.

All persons having business with the Society, or wishing information not here furnished, will address the Secretary at Sparta till the first of October. After that time, at Augusta, Ga.

D. W. LEWIS, Secretary,
Sparta, Georgia.

From the National Intelligencer.

The American Press.

For a year or two past strong indications have been exhibited that the American Press was destined to be one grand "SCIENTIFIC JOURNAL." These indications have already become to a considerable extent, a reality. Said a Senator from the South, not long since: "The series of scientific essays I sent to our editors are published regularly in all our papers, and I hardly know what they would do without them."

Papers in all the States make it a point to furnish their readers something on scientific matters. In the midst of the highest political excitement something in the way of science found place in numerous political journals. During several year's respite from political excitement now in prospect, the whole American Press will doubtless give scientific matter a prominent place in their columns: certainly as schools are now seeking for appropriate lessons of instruction from that same source. A more instructive lesson, either for schools or families, cannot perhaps be readily found than the following little manual of geology, describing twenty-five elementary specimens, showing the elements and the structure of the earth. The numbers are founded on a fundamental classification of rocks, designed to aid young minds in collecting, classifying, and labelling minerals for the use of the homes and their schools.

The case is very plain and simple that if the papers—*all the papers*—in our country should give place to this brief manual of geology; and the schools—*all the schoolz*—of our country should use the papers containing it, both for reading and study in special aid of *simultaneous movement* would be made for the advancement of American science; a hundred thousand schools uprising in a body, going forth to take a lesson from the "OLDER VOLUME OF GOD;" every leaf, line, word, and letter of which declares that its author is divine and glorious.

Geological Cabinet.

An Introduction and Aid to Reading.

BY JOSIAH HOLBROOK.

The Bible is a book of examples, founded on principals for the regulation of human conduct; especially so for the management of the mind and soul, or intellect and heart. The example furnished by it, as a *starting point* in the pursuit of knowledge, is not only appropriate, as founded on divine wisdom, but is equally simple, beautiful, and sublime. "In the begining God created the heavens and the earth," is the sentence commonly referred to as a specimen of the highest sublimity. Its sublimity is in its simplicity, connected with the glorious truth uttered. It is also pre-eminently fitted to an inquisitive young mind, eagerly observing surrounding objects, at the same time rapidly and successfully, because *practically* learning them.

If the elements of the Created Universe form the "*first lesson*" of the Creator to his creatures, why not follow the example thus set us by Him who created mind, as a *starting point* in the training of mind? In accordance with this example of Divine authority, the elements of our globe are selected as a "*first lesson*" for children. A "GEOLOGICAL CABINET" is prepared, consisting of twenty-five mineral specimens, so selected, arranged, labelled, and described as to show, almost at a glance, the elements and structure of mountains, rocks, and soils; exactly fitted to gratify the eager curiosity of *every child* to learn what he sees; not only by seeing, but by handling, examining, comparing, classifying, and other steps for acquiring the most substantial knowledge by the thorough modes of learning.

"*Nature before Books, and Drawing before Writing*," is a motto always in accordance with common sense, and completly tested by experience, both in this country and Europe. It is already widely adopted on both continents, and is certain soon to be observed by all persons, everywhere, in the early ihstruction of children; The "ALPHABET OF GEOLOGY," by preceding the "Alphabet of Books," changes the latter from an unmeaning, irksome task, to an instructive, delightful lesson; learnt rapidly and certainly, because practically and agreeably.

The principal families of rocks, or geological formations, are the granite family, composed of three members, and forming all the highest mountains in the world; the hornblend, or trap family, consisting also of three members, widely scattered over the earth. Lime formations, very abundant,

various and useful; magnesian or serpentine formations, containing highly valuable ores; conglomerate rocks, or those formed from the fragments of broken down rocks; carbon, or coal formations; fossils, or organic remains of more than nine thousand animals, with those of numerous plants; coral ranges, very extensive, and increasing, by labors of insects of the sea; and volcanic rocks, composing very numerous islands, and some mountains, from ten to fifteen thousand feet high. All these vast ranges of rocky and mountain masses, constituting the elements, the grandeur, and riches of our earth, beautifully and emphatically declares the sublime truth, that He who formed them, has, in deed and in truth, *"weighed the mountains in scales, and the hills in a balance."*

Nos. 1 and 2. *Quartz* is the only mineral found everywhere. It forms a considerable part of all the highest mountains in the world; is the principal element of soils; composes nearly all the pebbles upon shores, and in banks of gravel and sand; is the only material essential in the formation of glass; and, in some of its varieties, formed most or all the gems mentioned as set in the breastplate of Aaron, the high priest; also those mentioned as composing the streets of the New Jerusalem. Quartz also forms most of the precious stones used in all ages of the world as personal ornaments, worn on fingers, breasts, &c., and hence furnishing, to a considerable extent, articles of commerce among nations.

It scratches most other minerals, and is, hence, one of the hardest. Its colors are white, red, brown, smoky, blue, green, yellow, and clouded, with various shades of different colors. The most common quartz crystal is a hexogonal or six-sided prism, ending in a pyramid with the same number of sides. The names determined by the colors, forms, &c., are milk quartz, smoky, gray, yellow, rose, limpid, jasberry, blue, red and clouded quartz, with numerous other varieties. The gems are amethyst, or purple quartz; jasper, or red quartz; cornelian, yellowish red; agate, clouded, &c.

No. 2. *Burstone* is porous quartz, principally brought from France, and used for the stones of flour mills, and is preferable for that use to any other material yet discovered. Its great hardness, and numerous pores, give it the character of an aggregation of knives, admirably fitted for reducing wheat and other grains to flour.

No. 4. *Felspar* resembles quartz, and is extensively combined with it, in rocks, mountains, soils, &c. When pulverized, or decomposed, it forms clay, as pulverized quartz does sand. The two combined, are the principal and essential ingredients of all soils, and of course should be fully and familiarly understood by all farmers. Felspar is used for making China ware, or porcelain, as quartz is for glass. It is scratched by quartz, and breaks more in the form of lamina, or a smooth table surface, giving it the appearance of a collection of small steps. Its color is white, reddish white, flesh-color, sometimes brown, and occasionally other colors. It is far less various, and less beautiful in its varieties, than quartz. When it has a glassy appearance, and is translucent, it is called adularia. Labrador Felspar, found extensively in Essex county, N. Y., is opolescent, or has a play of colors, as it is exposed to the light in different attitudes.

No. 5. *Mica* united with quartz and felspar, to form the Himmalaya mountains, the Andes, Rocky Mountains, Alps, Pyrennees, Carpathians, Ural, and all the highest mountains in the world. It is also found in ledges and loose rocks, or boulders, widely scattered over different countries. It is easily split into leaves of almost any imaginable thinness, exceeding elastic, and semi-transparent, and is thus fitted for the doors of stoves and other purposes, as a substitute for glass. In some parts of Russia it is much used for the windows of houses, where it is known by the name of Muscovy glass. It is frequently called isinglass.

Nos. 6 and 7. *Granites* composed of quartz, felspar and mica; the latter thrown about in every possible direction; rendering the rock *unstratified*, not slaty. It differs widely in the degree of fineness of the three ingredients composing it, the mica sometimes being in plates two feet or more in diameter; at other times, in fine spangle like seals, thickly scattered through the rock. The quartz or felspar, also vary greatly in the size of the masses composing the granite.

Fine granite is best fitted for purposes of architecture, for which it is extensively used in many countries. In the United States are many quarries, furnishing building materials for all our seaports and many inland towns and villages.

No. 8. *Gneiss* is slaty granite, rendered so by the uniform direction of the mica. It hence splits in slabs of large and smooth surface, fitting it for sidewalks, floors, bridges, and many other purposes of economy and convenience. It is the prevailing rock on New York Island, as it is in many parts of New England, and many other parts of the world. The color of gneiss depends, of course, upon that of the materials composing it, especially the mica, which is sometimes black, giving it a black or dark color to the gneiss. It is more commonly of a lightish gray, and sometimes silvery.

No. 9. *Mica Slate* resembles gneiss, but is composed of quartz and mica. Felspar, composing a part of granite and kneiss, is wanting in this rock. It frequently has an undulating urd face, but is smooth. It splits readily, and is uses for purposes similar to those of gneiss. Garnet are more abundant in this than any other rock; and this rock contains more of those than any other crystals.

No. 10. *Hornblend* is black, green, or other

dark colors. It is more tough than hard, and is an element of rocks much used in architecture, also forming some of the most beautiful scenery in the world.

No. 11. *Sienite* is commonly called granite, but differs from it in taking hornblend in place of mica. The Bunker Hill Monument (Mass..,) Merchant's Exchange, Astor House, Rutger's Institute, and numerous other buildings in New York and other cittes, are built of sienite, commonly called Quincy granite. Cleopatra's Needle, Egypt, is sienite.

No. 12. *Basalt.* The Giant's Causeway is composed of basaltic pillars, many of which are six-sided prisms, from six inches to a foot or two in diameter, in blocks about the same length, with one end rounded and the other hollowed, so as exactly to match, and are piled upon each other to the heighth of 200 feet or more. Rocks nearly resembling these, and piled upon each other in a similar manner form the palisades on the Hudson, the two bluffs at New Haven, Mount Holyoke, and many other mountain masses in this and other countries. The same kind of rock is scattered over many countries, in the form of boulders, and is frequently known by the name of iron stone. It is composed principally of hornblend or augite, which it resembles, and felspar with a large portion of iron. Basalt, greenstone, and other rocks of the same family are much used for building.

Nos. 13 and 14. *Lime* formations are extensive, various, useful, and sometimes beautiful. They embrace common limestone, nearly all marbles, chalk, and many beautiful crystals. The older formations are in coarse grains, which give it the name of granular lime. The more recent is frequently finer or more compact, when it is called compact lime. It is frequently found in rhombic crystals, when these crystals are transparent, they are frequently called Iceland spar, and produce double refraction, giving one line or letter seen through it the appearance of two.

All these formations are the carbonate of lime, composed of lime and carbonic acid. When burnt, the acid is thrown from the lime, when it is reduced to quick lime, and fitted for various uses in building; also for manuring land, for which it is extensively used. White lime and milk quartz are sometimes confounded, but they may be easily distinguished by the knife, as the former can be cut, and the latter not, and more certainly by an acid, as the former effervesces, and the latter not.

No. 15. *Gypsum* is the sulphate of lime, and of course composed of sulphuric acid, (oil of vitriol,) and lime. In Italy and other countries it appears in the form of alabaster, which receives a fine polish, and is translucent. When crystalized in transparent plates, it is called selenite (moon stone.) It sometimes appears in fine silky fibres, when it is called fibrous gypsum. Radiated gypsum is another beautiful variety of this mineral.

Gypsum is a powerful manure, and is much used for ornamental work, in plastering rooms; also for busts and casts of various kinds.

No. 16. *Serpentine* rocks form extensive barren ridges, but contain chrome ore, magnesia, asbestus, and other useful and curious deposites. It takes its name from its variety of colors like the serpent, though its prevailing color is green. The prevailing rock at Hoboken and Staten Island is serpentine, which extends, with frequent interruptions, through New Jersey, Pennsylvania, and Maryland, into Virginia. It abounds in various parts of the world.

No. 17. *Talc*, like serpentine, contains magnesia. It is sometimes known by the name of French chalk. It has a greasy feel, and is easily cut with a knife or scratched by the finger nail.

No. 18. *Soapstone* is composed of talc, minutely combined with quartz. It is easily cut with an axe or saw, turned in a lathe, smoothed with a plane, and thus changed into any form desired for economy or convenience. It is less abundant than serpentine, but is frequently found with it.

No. 10. *Sandstone* is composed of grains of sand or quartz, cemented into rocks, commonly by iron. It abounds in many countries, and is much used for buildings, and is the material for grindstones, whetstones and other similar articles.

No. 20. *Puddingstone* is a rock formed of pebbles and cemented by iron. The pebbles are commonly quartz, rounded by a long course of friction. When the pebbles are limestone, not rounded, the rock is called breccia.

Nos. 21 and 22. *Coal.* Mineral coal is divided into two great families, bituminous and anthracite. The former contains hydrogen, which produces ready ignition, a bright blaze, smoke, smell, tar and coke. Anthracite is composed principally of carbon, which is ignited less readily, produces little blaze, smoke or smell; no tar or coke, but a higher heat, and is more durable. Bituminous coal is found in Pennsylvania, Ohio, Illinois, Missouri, Tennessee, Alabama and other States. Nearly all the anthracite used comes from Pennsylvania. Both are found in various parts of the other continent.

No. 23. *Fossils.* More than 9,000 different kinds of animals are changed into stone, or petrified; the greater portion of the species now extinct, or unknown in a living state. Some animals thus petrified were larger than elephants; others are microscopic, or too small to be seen by the eye alone. Microscopic animals thus fossillized, and now forming chalk, flint, marl, &c., were once alive, and possessed of the powers of action and enjoyment.

The fossil called lilly encrinite, or stone lilly, has been found to contain more than 100,000 bones or joints. On some portions of the Erie Canal, rocks composed of different kinds of encri-

nite, are so abundant as to be used for the walls of canal locks. They receive a fine polish and make beautiful marble.

Six hundred different kinds of fossil, or petrified plants, have been discovered. In some cases large trees, and even forests, are changed into stone. Many kinds of plants, especially ferns, are found in slate and other rocks about coal mines.

Coral. Myriads of insects have been at work for thousands of years in forming rocks and islands in many parts of the world. They have built from the depths of the sea large masses and ranges of rocks, many thousand miles in extent. Their work is generally in a circular form, frequently surrounding islands. They leave openings sufficient for ships to enter, and space enough between their work and the islands for a safe harbor to ships when entered. The rock thus formed is called coral; the ranges encircling islands, coral reefs; and the insects engaged in the work, coral insects; of which numerous kinds are known, but are all small.

No. 25. *Lava.* A volcana is a burning mountain. More than three hundred have been discovered upon the earth. Some of them are constantly throwing out fire, smoke, ashes, and melted rock. Others burn for a time, and then cease, or perhaps break out in a new place. Some of these volcanoes have thrown masses of melted matter, which have passed off in streams to the surrounding country, covering a surface larger than some of our States. The matter thus thrown from volcanoes is called *lava;* and the hole or opening from which it is thrown is called a crater. The highest volcano is in the Andes mountains, more than 17,000 feet high, which sometimes throws out matter 6,000 feet above its summit. In some cases the quantity of matter thrown from a volcano is greater than the whole mass of the mountain from which it is thrown. In 1783 two streams of lav flowed from a volcano in Iceland; one fifty miles long and twelve miles broad, and the other forty miles by seven; averaging one hundred feet in thickness, destroying twenty villages and nine thousand inhabitants. Most of the islands in the Pacific Ocean, and many in other parts of the world, are volcanoes. Some islands have risen from the midst of the sea in modern times by the power of volcanoes.

Remarks. As a "First Lesson" for children, the "*Geological Cabinet*" here described, is probably the best that can be provided. It is certainly fitted both to interest and instruct young minds before they can comprehend any book which is or can be prepared for them. The lesson is taken from "THE BOOK," studied with eager curiosity by *every child* the first moment he opens his eyes upon the light of heaven; and is, hence, an introduction to continued lessons through time from the same book, studied in the same practical, delightful way as here commenced.

While this is a successful and delightful introductory lesson in "*God's Older Volume,*" the book of creation, it creates a desire and furnishes aid in learning the books of men. Children in such a course never fail to learn to spell, read, write, &c., almost without knowing it; as they are sought for as instruments in their work. They thus not only learn how to read, but understand what they read; absolutely essential to make a good reader. Such knowledge, thus acquired, also gives *independence of mind,* under all circumstances desirable—for a republican, indispensable; it is in the very essence of republicanism. As the elements of the earth are also the elements of soils, a knowledge of them is especially important for farmers; and hence ought to be learnt by every farmer's sons, and daughters, too. The Geological Cabinet is, of course, peculiarly appropriate for country schools; not less so for families. It becomes doubly important in the country, from the case of increasing it by collections made by children, not only for their schools and families directly, but for exchanging with other schools and families in other places and countries. Thus "*National Interchanges*" of the most enlightened *pacific* character may be established among all sections and classes of the human family—a tendency to a "UNIVERSAL BROTHERHOOD" on earth.

Connected with this First Lesson in Geology are others on Geometry, also peculiarly fitted to young minds. For such lessons simple figures are prepared, showing the elements of form, as exhibited in endless and beautiful variety in objects around us. These figures, such as squares, triangles, hexagons, &c., are drawn on slates and on paper; also formed of paper cut and combined into various shapes, showing the different crystals, structure of leaves and wood, work of bees and other insects; also the work of human hands in architecture, and all kinds of mechanism; thus making Geometry, like its sister science Geology, a source of endless instruction and delight, if used as first lessons in primary education.

Connected with both these sciences, especially Geometry, Drawing is indispensable; while, like both the others, it is highly delightful. Not only Drawing-Masters, but Writing-Masters, now almost uniformly advocate the sentiment of "*Drawing before Writing*"—a sentiment doubted by no one who ever tried it.

Hence, Geology, Geometry, and Drawing, separately, and still better together, form the appropriate *First Lessons* for children, both in schools and families. Each separately, and still more all united, are especially important as aids to *self-instruction;* also to *mental instruction* of children in the same family; virtually changing families into schools for the instruction of children, the relief of parents, and the very highest satisfaction

of all surrounding the "family board." By them, as remarked by a learned Judge, "*observation and qualification become early and fixed habits of the mind; the only habits by which the mind can be improved.*

AN ESSAY,

Read before the L. and S. Society of Selma, by C. G. EDWARDS, Esq.—*Published by the request of the Society.*

I do not think that we have at all over-estimated the importance of the public improvements that are going on at this place. But while we are so much engaged about railroads, stores, warehouses, &c., it will not, perhaps, be amiss to call off attention, occasionally, to subjects more humble, indeed, but not less deserving our care. With this conviction, we will, to-night, solicit your attention to the capabilities of Selma for certain domestic comforts, and the best way of using those capacities to advantage. We will inquire what materials Providence has here provided to enable us to make our homes what they ought to be—the pleasantest places in the world to their inmates—what can manly strength and female taste, when properly directed here, do to render convenient and useful and beautiful our yards, our gardens, and our orchards—to make abundant wholesome fruits, elegant shrubbery, cool shades and lovely flowers.

For, after all, it is at home that we must look for what concerns us most intimately. There are our chief sources of enjoyment and sorrow. We spend most of our time there. It is at home that our most reliable friends—our fondest hopes are found. Every transpiring event in our dwellings necessarily affects our well-being. How desirable is it, then, that this important place should be made pleasant to parent and child, brother and sister, by every practicable means and innocent artifice that can add ought to its beauty, its convenience and its comfort. That the eyes of those present may behold it with pride and its memory be grateful to the absent. If some of us cannot do much, we can all do something, at least, in this way. A few shades, a little shrubbery, a few flowers, and vegetables and fruits, are within the means of all; they require but little labor and pay good dividends. And it costs no more to do what we attempt to do right than wrong. When well done, it is worth double, both in looks and usefulness. Even the humblest habitation may be made desirable and pretty by these means. The appearance of a place is an indication of the character of its inhabitants. You have sometimes passed a neat log house in the country—you see proper shade trees regularly set out, some shrubbery of evergreens, a few roses and creepers, a little orchard, and a garden kept clean of weeds—all around looks nice and tidy. How different your opinion of these people from what it is of the inmates of the next house, perhaps where all is the reverse of this—hardly a fruit, shade, flower, or vegetable to be seen, and what there is, looks slovenly and neglected. No wonder the husband and sons of this latter family take to hunting and the dram shop, and the daughters are in haste to marry off and get away—there are so few comforts at home—they are ashamed of it—nothing is there to please the eye or gratify even an humble pride. But one person is there for whom we feel a sympathy—the wretched wife and mother. She cannot desert this sordid habitation. She, poor, pale, sickly, oppressed drudge, drags out there a weary, monotonous existence, as destitute of ideas as she is of comforts.

Let us first enquire whether we have the right climate and soils for the successful cultivation of these family comforts. Placed in the southern part of the temperate zone, our summers are long and warm, but the winters are very mild; snow is almost unknown, and ice never an inch thick. Although we cannot have here the currant and gooseberry of colder climes, yet, to compensate for these, we can have the greatest abundance of pomegranates, and the greatest variety of grapes and figs in the open air. Of soils we have every variety in the city and vicinity—sandy, alluvial, prairie, marly, clayey, gravelly. These are the very aliments of fruits, vegetables, trees and flowers, and the very substances on which they all delight to feed in different proportions. Every one of these kinds of soil is convenient of access, and we can of them easily make a soil to suit every tree and plant that can grow in any climate. Not only have we these constituents of a good soil convenient to us, but kind nature has mixed and prepared it to our hands. In a short distance of the town is an abundance of black, rich prairie earth. It lies in the fields, and is washing off the road sids. or producing only rank and worthless vegetation. This can easily be hauled upon our gardens, yards, &c., and place within reach of the small roots of all the subjects of domestic culture. Thus used, it is, perhaps, the very best manure for most kinds of vegetation. It is composed of all the elements of the most useful soils—clay, lime, vegetable matter, sand. Probably it has not quite enough of sand; but we all know where that can be found. With such soils and such a climate, if we do not have an abundance of these luxuries, it will be because we are too indolent or too ignorant to cultivate them. Indeed, in no country in the world could a greater variety and quantity be produced, and with greater ease, than in Alabama. Many evils that annoy them in more Northern climes are here unknown. And yet in no civilized country has so little been done for that purpose, and that little done in so slovenly and unskilful a way. We set out a tree like a post

and trim it up like a bean pole; cut off all its lungs, and then wonder why it does not breathe and live. We get our garden seed from Long Island, and cultivate our vegetables not in accordance with the peculiarities and wants of our own climate, but just as they do in New England. And it is perfectly unaccountable that not one garden or orchard in a hundred throughout the State, has a foot of ground devoted to the cultivation and improvement of the twenty kinds of edible fruits that bloom and ripen in our fields and woods, or the fifty kinds of grapes that creep over a thousand trees in our forests.

But a better time is coming upon these long neglected offered gifts of nature. In various parts of the State many persons of enterprise and rural tastes have set about providing their homes with many of these useful and ornamental stores that Providence has thus invited us to partake. They are beginning to discover what former errors to avoid, and what methods of succeesful cultivation to pursue. A taste for these things is becoming fashionable, and when that is the case, every one who does not intend to be out of the world will, it is to be hoped, be in the fashion.

Of shade and ornamental trees, we have a number of suitable native sorts. Such shades as the ash, the oak, the wild poplar, the sycamore, the cherry. For streets the paper mulberry is, perhaps, the best, as it bears transplanting so well, and it grows so rapidly that, in a short time, it affords a grateful protection from the summer sun. Of ornamental trees and shrubbery, we still have a greater number of native origin. To my taste nothing of the kind looks so well, near a house, as evergreens. What can excel the pyramidal cedars, the verdant holly, the deep green, large leaved magnolia, and above all, the rich, green cones of the ever beautiful wild olive. Who that walks about this town but must admire the vivid colors of these magnificefft evergreens contrasting with the dull, dead and dreary appearance of the deciduous plants. "Plant green trees about thy habitation, O son of man, so shall thy heart rejoice, and thine eye be glad in them in the winter's frosts as well as the summer's heats."

Some foreign varieties of evergreens, also, have been partially acclimated in this latitude, and are found to do well. The Indian cedar, Chili pine, Chinese arbor vitae, English laurel and the spruces. Add to these the box, the cape jessamine, and the large class of ever verdant roses, and we have an abundant store of ornamentral trees and shrubbery to gratify every variety of taste. You may set them out successfully at any season of the year, if you do it properly. I have found all evergreens to do best when set out in August. The growth, of course, will be much hastened by an annual application of rich earth and manure. But I pray you, when you take up or set them out, do treat them with some little consideration and mercy. Don't send a negro out alone, to jerk and tear away all the little roots entire, and to bruise and split off all the rest within a foot of the stem. Don't stick it down in a hole as if you were setting out a gate post, and above all, leave it some leaf buds, which are its lungs, to get a breath of air. If your fingers itch to be using the knife, you may employ them usefully in shortening the branches.

But what shall I say of the domestic flowers which the soil and climate of Selma is fitted to produce. Who shall describe their thousand varied beauties? who shall enumerate them, for their name is legion? Here every taste can be satisfied—every want supplied. Each month can be made to present its peculiar tableaus. Neither the heat of summer nor the cold of winter is without them. I shall not attempt to describe or to enumerate them.

Abundant and desirable as are the vegetables we might raise in the kitchen garden, few, comparatively speaking, are much cultivated, and still fewer cultivated with enlightened industry. We make a mistake at the start. We get northern seed. Now every intelligent planter that has tried it, knows that Northern seed—neither rye, nor oats, nor wheat, will do well here; and yet we persist year after year in buying garden seed from Connecticut and New York. The consequence is, as soon as the warm weather comes, the vegetables fail, and are short-lived and trifling, and we get no seed at all. What is, perhaps, worse than this, we plant and cultivate according to the directions of Northern gardeners, intended and suited not to our climate, but to one entirely different. By all means get Southern raised seed and cultivate and plant according to the directions of Southern gardeners. Mr. F. D. Gay, a seedsman of New Orleans, has long been engaged in selling Southern garden and agricultural seeds, &c. I cannot do a greater service to the lovers of the wholesome products of the garden, than to refer them to him. Under his directions your kitchen gardens may furnish their abundant and ever varying supplies all the year round. Your cabbage may have a hard head—Brussels sprouts be common—Cauliflowers sometimes on your tables—Cellery not so rare—Fetticus not unknown—and turnips fit to eat every month in the year.

The reasons why many in the Southern States, who have attempted to raise fruits, have been unsuccessful, are various. They have obtained the trees from more Northern States, or they have followed Northern directions; suitableness of soil to the habits and wants of the tree has not been regarded. The tree is, probably, only a scion, or has been bought of a strolling pedlar—it has been set out badly and too low in the ground—of course it has been trimmed up so as to expose its naked body to the burning sun—and lastly, sufficient

care has not been taken to destroy its enemies or to supply it with wholesome food.

These are errors, and all these errors should be carefully avoided. Northern trees cannot endure our long, hot summers, until after a long course of re-propogation they have become acclimated. This you have no time to do even if you know how. Get acclimated trees, and be guided in your cultivation of them, not by a book written for a totally different climate and soil, but by the advice of persons who have successfully raised them here. Observe what kind of soil you have and what your tree requires; and, above all, know yourself, and if you have not soil that is suitable, and are too indolent to collect it, give your tree to some one who has the requisite soil or the requisite industry. A scion is worth just nothing at all. Get grafted or budded trees, and get them, too, of a regular trusty Southern nurseryman. Your travelling tree peddler is, nine times out of ten, a mere cheat. If, however, you desire to propagate fruits yourself, and to raise the trees by laying, budding, or grafting, then get the cuttings, buds and grafts from any fruit trees of a similar climate. Never trim up a tree so as to expose its body to the sun. Indeed, the most approved modern method of raising most fruit trees, is to dwarf them. This is especially important in our climate, when the intense heat of our summer and fall months is so prejudicial. Dwarfing is done by grafting on stocks that naturally never grow tall, such as the Quince and Paradise apple. Every tree may, also, be made dwarf to some extent by not cutting off the lower branches and by topping the ambitious ones. Dwarfing has many advantages. The trees can be planted more closely together. You can have many more varieties in the same space. They bear sooner, are much more easily protected from insects, high winds and frosts. Get dwarfed trees of the regular nurseryman. Fruits of all kinds have many insect enemies that will keep alive the vigilance of the amateur fruit raiser. Rests asured that every worm, every fly, every bug you see about a fruit tree is your rival for its products. Kill him; he is there for no good. The most efficacious means of general destruction of these busy interlopers, is to wash the bodies of the trees with soap suds in the early Spring; at the same time to scatter salt and lime and ashes under the branches, and to allow the fowls at all time free access to the orchard. It has been plausibly suggested that sulphur and gum camphor, china leaves and berries would all be beneficial. Winter is the proper season here for setting out fruits.

But if you really do wish to raise fruit, be careful, my dear sir, with your little tree when you first take him under care. Deal gently with him. I pray you. Remember he is yet but a suckling, and has just been rudely torn from the parent breast. Do with him as a kind mother would with her infant when she lays it in the cradle. Protect him from excessive heat and cold. Make his bed ample and soft. Spread out his lower limbs to their full extent, and place him no lower than he has always been accustomed. Keep all annoyances away from his pillow. There let him rest in peace, assured that he will, in good time, smile on you in flowers and repay all your care with fruits.

There is, indeed, a great resemblance between animal and vegetable life. In order to thrive, both should be treated in many respects alike. Both of these great divisions of created beings require to be placed in suitable situations, and to be supplied with wholesome nourishment. If you have not the proper soil for your tree, make it. The materials are abundant and convenient, in and about us, to make soils suitable for the sustenance of every tree under heaven. Feed your trees well every fall. Find out what of sand, or lime, or clay, or gravel, your trees love to feed on, and supply them from time to time. They consume a great deal of vegetable matter, and care should be taken to supply them with it bountifully.

Many persons are deterred from attempting to raise fruits, because it seems a long time before they reap the reward of their care. This is a great mistake. Many fruits, such as the fig, the rasberry, the strawberry and the pomegranate will, if properly set out and cultivated, produce abundantly from the nursery. Many more—the peach, the grape, the plumb, the quince, and the dwarfed pear, will amply compensate you in three years, and almost all in five. Time flows on by us faster than we are aware, and even five years are soon gone. At the end of that time your orchard is filling your baskets and adorning your tables with every variety of the gifts of Pomona. The pear in its hundred varieties and flavors is yours—the grape with its ever varying leaves and pendant clusters—luscious plumbs of every size and color—apples for winter as well as summer—the fragrant strawberry, apricots, almonds, peaches, figs, rasberries, sweet pomegranates—these, all these, can be commanded in our city and its vicinity by the exercise of a little labor and intelligent care. And these all beautiful, wholesome and delicious.

The cultivation of shades, vegetables, fruits and flowers is rather a relaxation from business than a care—more of a pass-time than a labor. When a person once engages in it, he becomes interested in it, and the more he learns the more will be his pleasure. No occupation can be more elegant, more healthful, or more delightful. If these things be so, (and I appeal to the hundreds whose attention has been recently awakened to the subject) I think I may claim from the citizens of Selma and its vicinity, a small place in their consideration for these my humble favorites. Let them not be wholly forgotten amid the bustle, and

din, and hurry of business and pleasure. For all that makes our homes comfortable and pleasant. I assure you they are better investments than railroad stocks—almost as good as town lots. They add more to comfort than fine furniture—more to respectability than fine equipages. They impart an air of comfort and neatness and dignity to every habitation. We pride ourselves upon our city for its suitableness for business and its fine, elevated location. Let each add his mite at home, and we may soon have no less reason to be proud of the beauty and comforts and conveniences about our dwellings. I persuade myself that a taste for these things will soon be as rife here as it has recently become elsewhere; that in a short time we shall appreciate the advantages of soil and climate we are favored with; that by degrees every dwelling will become surrounded with a little paradise of its own; cooled with shades—all the year round verdant with evergreens—beautiful with ever varying flowers—and abounding with luscious, fragrant and delicious fruits.

From the Panola, Mississippi, Picayune.

A. H. Burdine's Cotton Picker.

We wish to call attention the following letter, which we think will repay a perusal. That most indefatigable man (Mr. A. H. Burdine,) has triumped over apparent impossibilities, and has actually contrived and executed a machine that will relieve the human fingers from the employment of picking cotton from the stalk. That it will suceeed, we cannot for a moment doubt. The fact is, that it has been tested—it has worked well, and redeemed the promise the inventor made, who has realized in its success the dream of many a year. He will soon return to his home in the South with a supply of his machines, where he expects to convince the most incorrigible skeptic of its great value.

WORCESTER, MASS., May 2, 1852.

DEAR PICAYUNE:—I take pleasure in announcing to the public through the Southern press, that the long desired and much needed instrument for gathering cotton from the stalk in the fields by machinery, has arrived at a degree of perfection that fully justifies the announcement that one hand with it, can gather as much as two hands can without it, with much less laborious effort. It will save the cotton in much better condition than is usually done by hand picking, all accomplished by a very simple process, and at an expense amounting to a mere trifle to the user when compared to vast saving of labor and cotton both in quantity and quality.

In this little instrument are found the admirable qualities, simplicty, utility and economy. It is easy in operation, few in its parts, expeditious in its work, and beautiful in appearance.

As an economiser, the cotton planter has not its equal in the whole lists of agricultural implements.

A. H. BURDINE.

Of Ponola County Mississippi,

TURKEYS.—It has always been surprising to us that so little should be said in favor of raising turkeys. The turkey is the prince of birds for the table or the market, yet it don't seem to be praised by the raisers of poultry as it should be. This thing evidently goes by fashion, and we really wish those who set the fashion in such matters, would bring about the fashion of raising turkeys. They cost less in food and care, according to their size, and bring a greater price than any other fowl, yet our farmers neglect breeding them, and pay all their extra attention to the breeding of lean, "lank, slooney" fowls from China, that will consume twice their worth in a season, don't come to maturity till a year and a half old, and when placed upon the table, are neither good chicken or poor turkey, and from the stringy flesh of which one turns away without any sort of satisfaction.

But, says one, they are destructive! and we would ask if a China fowl is not destructive? Setting aside the fact of their voracious appetites—bolting corn of a week old—just let them loose in your garden or cornfield, and you will be satisfied of their destructiveness. They will destroy everything that comes in their way—to the onions in your onion bed. And that a turkey will not do. Turkeys ramble, it is true, but it is questionable whether in their very rambles they are not performing a valuable service to the farmer. They are in pursuit of insects, and a farmer who has a flock of turkeys is very little troubled with grasshoppers, crickets and such vermin.

In raising turkeys we would recommend a cross of the wild and domestic varieties. Say, put a wild gobler or one as near as the wild state as you can get, with a domestic hen turkey, and the produce will be a good cross. The young turkeys will have a disposition to ramble, but the old hen's domestic education will keep them in check. On the contrary, if the hen turkey be wild, she will lead her progeny in every direction but the one towards home. Then our advice is, to those who would raise poultry, raise more turkeys and less chickens, particularly of the *lank*, gawky breeds from the celestial Empire, whose only good quality is, that they are always blessed with a good

appetite! Turkeys are easily raised, readily fattened, quickly sold, bring a good price always, and as a friend at our elbow says of a band of tobacco, there is "some chaw to them!"

Why not grow more Wool?

It has been the aim of this journal to so awaken the attention of farmers as to enable them to adopt the most profitable system. We have, therefore, urged upon them, from time to time, an increase of their flocks of sheep. Our own experience and observation have satisfied us that there is no kind of farming that is so generally profitable as raising sheep and wool. It matters not whether you are upon the bleak mountains of Vermont or in the fertile plains of Texas; upon the prairies of the West, or the now solitary hills and mountains of the South. Everywhere and anywhere the sheep will live and thrive, and with proper care, pay more for the labor and capital invested than any other animal or any other system of farming. It is one of the most useful and economical machinery which has been given us to convert the vegetation of the farm to money. Were it for the first time now presented to us we should consider the sheep one of the most wonderful animals nature has produced for the use of man. Its annual growth of wool so admirably calculated for human clothing and used in all portions of the globe—its skin and flesh, and in many localities, its milk, all serve for the necessaries or luxuries of man. There is no animal in which is so little waste or so little loss. For at least seven years of its life it will give an annual fleece each year equal to the value of the carcass, and the yearly increase will be nearly or quite equal to the cost of keeping, giving as a general thing a profit of cent per cent. Of all other animals the cow comes nearest to the sheep in the profit it returns to the farmer, for if well cared for, it will pay for itself each year by the milk it yields, and defray also a portion of the cost of keeping.

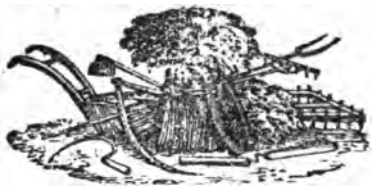
Is there any branch of farming or any other kind of legitimate business that will yield for a series of years a profit of ten per cent. We assume that there is none. The very idea that profits of fifty per cent. could be realized in any branch of business would set the whole capital of the country in motion. Farms would be sold—merchants would sell off their stocks—bankers close their banks—and indeed everybody who had money to invest would rush into this gold mine.

We aver, without fear of contradiction in truth, that there is hardly a locality in the whole Union where any kind of farm animals can subsist that the sheep, if properly attended to, will not give a net profit on the investment of at least 50 per cent., and that with the ordinary management of farms, it will give 30 to 40 per cent.

That there is no danger of overdoing the business, we have shown repeatedly in previous numbers. The annual increase of population in the Union requires the wool from three millions of sheep, so that to clothe the increased population would require an annual increase of sheep equal to four millions. But when we come to consider that there is now an annual deficiency of over 70 millions of pounds, there can be no doubt that wool-growing is the most stable pursuit that can be engaged in. We cannot glut the market, nor will there be any long time that the market will be depressed below a point of profitable production. On the contrary it is certain that no farm product goes less often below this point than wool. It has long been a source of constant wonder to us that so many farmers in the Western States neglect the sheep for the very precarious business of grain-growing. Every year will give them a crop of wool, if they but take care of their sheep. But there is no certainty for wheat, prepare the ground ever so well. If we have been rightly informed, the wheat raised in the West has cost the farmer more than he has obtained for it in the market. Too much dependence has been placed upon this most uncertain and expensive crop. We have tried wheat-growing upon probably as good a wheat farm as can be found in Western New York, and we have also tried sheep upon the same farm, and we are free to confess that, although we have a good market at our own door, yet we can raise a given amount of money quicker and much easier with a flock of sheep than with wheat. But we find it well to raise both sheep and wheat, as by that means we find we get a better profit than to be confined to either alone, which, indeed, most land that can be plowed is the better to come at regular and not long periods under the plow. With us, and in this region, 4 years is as long as it proves profitable to leave land to grass. Very few now resort to naked fallows. Some mow their clover early and then let it grow till August, when it is turned under, cultivated, and sown to wheat; others mow the first year, and pasture with sheep the second, and then plow. Every good farmer keeps a few sheep at least. Very many who have been in the habit of of putting up a very large quantity of pork for Summer use, now select out a few wethers and give them extra keep and make their summer meat of mutton—decidedly the most healthful that can be used fresh, and thus realize the money for their pork fresh.

The inducements to grow more wool are, a sure market, less fluctuation from the point of profitable production than any farm product, a larger interest or profit on the capital invested than any other business, and, therefore, the best business, as a general thing, that the farmer can follow.

[*Wool Grower.*



American Cotton Planter.

MONTGOMERY, ALA., SEPT., 1853.

N. B. CLOUD, M. D., EDITOR.

Our Agents.

WM. STRICKLAND, Book-seller, No. 28, Dauphin street; BOULLEMET'S LITERARY DEPOT—corner of Royal and Dauphin street; H. H. CARVER & Co., Battle House Book Store, Mobile; from any of whom the back numbers may be had.

A. P. PFISTER, Exchange Corner; C. R. MANSFORD, Market street, Montgomery.

With *The American Cotton Planter*, our agricultural friends will find all the new and valuable publications of the day, either literary or agricultural, at the above-named Book Stores.

Mr. AMOS TRAVIS is our agent at Gainesville, Sumter county.

Mr. N. PLUMB, Sparta, Conecuh county.
E. B. FOX, Sandy Ford, Fla.
Capt. J. JACK, Havana, Greene county.
WM. G. BREWER, Tuskegee.
H. C. BISSELL, Carlowville.
Dr. WM. CUNNINGHAM, Burnt Corn.
Dr. J. F. DORTCH, Camden, Ala.
E. J. CAPELL, Esq., Rose Hill.
ISAAC PARKS, Oak Bowery.
Dr. BATT PETERSON, Clayton.
JAS. MONTGOMERY, Fife, Ala.
N. A. MCMILLAN, Canton.
Dr. J. E. POELLNITZ, Montpelier.
G. M. REYNOLDS Mr. TURNER, Mr. B. M. CLARK, and Mr. H. P. DOUTHIT are our traveling agents.

Our Correspondents.

We have received communications since our last number from Dr. M. W. Phillips, Miss.; R. C., Talladega; ***, Greenville, Ala.; Benj. Whitfield, Tuscaloosa; *, Burnt Corn; Dr. A. A. Swasey, Yucco City

☞ Our exchanges will please publish and notice the circular of the Executive Council of the "Agricultural Association of the Planting or Slaveholding States," and request the same of their exchanges throughout the planting States.

☞ We furnish our readers, in this number of the Cotton Planter, the Premium List of the Southern Central Agricultural Society complete, with the regulations, &c., necessary to be observed by those who may desire to become competitors for any of the Society's prizes at the next annual Exhibition and Fair, to be holden at Augusta, Georgia, commencing the 17th October next. In doing this, which consumes considerable of our space, we shall offer no apology, but the interest which every public spirited planter feels in the success of this great Society, and the influence which it has already and is still destined to exercise upon the industrial pursuits of our country.

We also give in this number the Premium List of the Montgomery County Agricultural Society. This is a new Society, and its Premium List shows very considerable energy and industry on the part of its members. We hope to see quite a degree of interest manifested on behalf of this young Society by the citizens of Montgomery—and we hope, furthermore, to see this Society at the meeting during its Exhibition and Fair, secure for itself at once and promptly, the only sure means of perpetuating itself and its usefulness, which is to resolve itself auxilliary to the Alabama State Agricultural Society. By that means, it contributes its quota as a county organization, in building up the State Society, and also in infusing life and action—which Society, (the State Society,) constituted as it is, and thus co-operated with, as is contemplated in its organization, by the auxilliary aid of the several county Societies, becomes a living life-inspiring temple, as it were, which reflects back the elements of conitnual activity among the members of the couny Societies, by enlarging the area of action and variety, thus inspiring every year new emulation, new and increased effort to compete successfully for the State Society's prizes, which emulation and zeal, however praiseworthy and active at first, being pent up in the narrow confines of a county, or one city, will certainly sicken and die, for the lack of that variety, emulation and zealous inspiration which a large organization alone can inspire.

It affords us much pleasure to call the attention of our readers to Professor Harper's article to be found in this number of the Cotton Planter. Our readers will observe that in this article they have full directions for collecting soils desired to be analyzed.

We have also an interesting article from the same gentleman on the analaysis of prairie soils. Many of our readers, we doubt not, will be greatly interested in this article. Receiving this article on the 25th inst., we are unable to give it complete in the September number, and we are unwilling to divide it. It will, therefore, appear in the October number. In this connection we would again remark to our correspondents that, to insure insertion in any particular number, their articles should be in the hands of the Editor by the 15th of the month previous.

RACING HORSES.—It is said to be a first-rate way to treat balky horses, by hitching a good stout horse and team behind them—they will soon forget their peculiar propensities, and be glad for a chance to move the other way.

No. 1 Phosphate Lime.

We ask the attention of our readers to the advertisement of A. B. Allen & Co. in this numeer of our paper. We know the great value of this article as a fertilizer, from experience. The name and reputation of A. B. Allen is sufficient guarantee of the genuineness of the article. As a fertilizer for turnips this article is little inferior to the best Peruvian guano.

Yellow Clover.

At the request of several of our readers and subscribers, we publish in this number of the Cotton Planter, Mr. Snedicor's article descriptive of and upon the treatment of the Yellow Clover, with the remarks of Mr. Isaac Croom. These gentlemen are well known in South Alabama as practical planters, and we doubt not but this clover has done well on their rich, heavy, black lands. Our experience with it, however, on light, sandy land, has not proved so satisfactory. A gentleman in our neighborhood, with some of the same seed we had or from the same man, (Mr. Snedicor,) planting rich oak and hickory land on the waters of Line Creek, highly impregnated with lime, grew it quite successfully; we are unable to say how he is pleased with it, or whether or not he still cultivates it, as we have had no conversation with him on the subject lately.

Our opinion is, that it has not been sufficiently tested, and as it promises what our planters very much need, something (clover or grass,) that will make a good winter pasture, we bespeak for it a fair trial and experiments varied.

The seed are for sale at the drug store of B. R. Jones & Co., of this city, as will be seen per advertisement in this number. We should be pleased to hear from Col. Croom on this subject.

Agricultural Association.

The circular of the Executive Council of the Agricultural Association of the planting or slaveholding States will be found in this number of the Cotton Planter. We commend it, warmly, with its sentiments and the objects contemplated in the organization of the Association, to the consideration of our readers, and the planters especially, of the cotton States.

It is impossible, as every practical intelligent man in the cotton States well knows, for individual effort, however well directed or intended, engaged to any considerable extent in the production of cotton, to make more than very partial progress in developing even the agricultural resources of individual farms. Our cotton operations commence with the year and close with the year, leaving barely time to prepare the land for the succeeding crop. There has been a puny effort making for years to establish a national Agricultural Bureau in connection with the departments of the National Government, and the objects, in fact, doubtless contemplated by the movers in this matter, are much such as those contemplated in the organization of the "Agricultural Association of the planting or slaveholding States." The organization of such Bureau, however, if in accordance with the genius and constitution of our Government, must, as the experience of all the past has taught us, inure but inconsiderably to the interest of the planting or slaveholding States.

In that the General Government has taken no steps to foster agricultural improvements in the country beyond the Patent Office influence, we have not, under the circumstances, been disappointed; but to the internal or State Governments, where we had a right to look as to the *foster mother* of the best and true interest of the people, we have, as yet, looked in vain for any efficient movement in behalf of the true agricultural interest of the planting community. Agricultural Committees are appointed at every session, by each House of our Legislatures, and of excellent men, no doubt, but the States having no corps of agricultural or geological survey in the field, or any State Bureau or Board of Agriculture, they have all together from time immemorial, not for the lack of capacity or good intention, but in the absence of all efficient State co-operation, failed to furnish half the information contained in one of the annual circulars of our public spirited commission merchants of New Orleans or Mobile. Now this is a lamentable state of things. Nevertheless it is fact. Now, then, our enterprising planters who have studied for themselves the science of agriculture, and whose long and patient experience has enabled them to observe the fruitful productions of our generous soil under the plastic hand of scientific industry, and who have had but a partial peep into the bowels of our mountains and our plains in a thousand localities, extending from the Potomac to the Gulf of Mexico, and westward to golden California, have by one simultaneous movement, determined that this subject shall slumber no longer.

Our first meeting was an auspicious one—assembled in Georgia, the "Empire State of cotten-dom." Gentlemen from seven of the planting or slaveholding States compared notes, arranged the preliminaries, and determined upon the organization of the "Agricultural Association of the Planting or Slaveholding States." This Association was organized last Spring in the city of Montgomery. Its constitution declaring its object, and the object of its founders has been published to the world through the columns of the American Cotton Planter and the other widely circulated agricultural papers of the planting States.

We come now respectfully, but frankly and candidly, to the friends of agricultural improvement throughout the South. In every section of the planting or slaveholding States, we speak not your name, sir, but we emphatically ask your co-operation in this patriotic enterprise. We appeal to you, gentlemen, upon the score of patriotism, to contribute your co-operative aid in hastening the period when every cultivated spot throughout

the "Sunny South" shall present a perfect specimen of the highest cultivation and fructification. We may not see its consummation, but what intelligent planter's patriotic bosom would not swell with admiration on beholding its slow but certain approximation? And then if, like Alonzo, he may surely say, "All this is my work," though dying, what higher reward could any man ask? But again, gentlemen, if you would have your State Legislatures engage effectually in this great work, contribute your co-operative aid with this Association in bringing to bear upon them the ponderous weight of an incensed public opinion. The productions of your fields, the labor of your hands, and the capital of your industry, sustain these internal governments, the true and legitimate object of whose creation, is to subserve the best interest of the people, which, surely, is the agricultural interest. But, gentlemen, we urge the importance of this subject upon your attention from another, and for the present, the last consideration. Despairing of all aid from those sources to which we had a right to look for the means efficient and active for the full and speedy development of our country's resources, we appeal directly to the sovereigns of the soil. This Association asks not only your aid, but your participation in rearing up, not alone for the agricultural improvement of the country, but for the encouragement of all the industrial pursuits of our country, a colossal column of light and intelligence, the corner stone of which is now laid deep and firm, sufficiently so to sustain a monument whose topmost peak shall tower amid the clouds of heaven, whose light shall be seen, and whose ameliorating influence, like the sun, shall be felt to the very confines of civilization. This Association promises, as will be seen in the circular of its Executive Council, intelligent practical information on all subjects connected with the industry of the country, in a gratuitous and substantial form, for the industrious, public spirited men of the country. It will not only afford us light and information, but it will secure for us *union among ourselves*, by which means, a world of enemies outside, begging bread and cotton, are to be held in eternal dependency.

Work for the Month.

With September, it may be said the cotton picking commences. It is very true that on some or most plantations this work is partially engaged in previous to this time. By the first of September, however, every arrangement should be made in the way of sacks, and baskets, and scaffolds, &c., unless the planter has ample house room in which to allow the cotton to be spread out and dry. The scaffolding, in such case, is unnecessary. Every hour that cotton remains in the sun after opening or being picked out, takes from it the peculiar native creamy gloss, which every merchant knows adds to its market value, at least; and this native color can only be imitated by artificially heating it in bulk, which bare imitation is had at the expense of injury to the fibre. The scaffolding, however, cannot well be dispensed with, unless the planter have house room, as cotton picked early in the morning or in showery weather, and put up in bulk, will, as well as heat, take on a dark colored mould. This is the proper month to sow rye for winter pasturage for stock. August is too early, and October will give a pasture fifty per cent. inferior to September. Rye sowed in August will head up that Fall, and will bunch but little, whereas, sowed about the middle of September, we have seen from one grain 200 stalks or heads. This is also the proper time to sow musquite grass, which is the only valuable Winter grass for the South we have tried. It is an evergreenn and perrennial grass here, containing more nutriment, and liked better by stock than any grass we have ever seen or used.

Grass seed like rye, may be sowed along after the hands picking over the cotton the first time, and the seed covered or the ground loosed up by harrows or sweeps. This, however, is only admissable *for good* to the land in very loose, sandy soils.

In the latter part of this month corn should be gathered from all land intended to be sown in wheat, that time may be had to prepare the land thoroughly in the early part of October for putting in the wheat well. More on this subject next month.

Turnips may yet be sowed to advantage, nor should this be neglected by those who wish fine stock, well fed and fat through Winter.

A great deal of fine hay may be saved in the early part of this month; if it has been neglected to this time, do not wait for it first to have ripened its seed; it is then worth but little.

On account of the drouth in the Spring and early part of Summer the crab grass is backward, and good hay may yet be made in the corn fields. This will add much to the stock of good food for cattle during the Winter.

For work for the garden and orchard we refer our readers to the valuable hints under our horticultural head. We hope many of our readers will avail themselves of the directions given them for budding, and commence at once those who have not as yet, and propagate for yourselves orchards of good fruit, and no longer depend upon borrowing. Fine cotton fields make money, but by devoting all one's attention to cotton fields, while he may have money, and no more, perhaps, than neighbor Comfort, his family enjoys *want of fruit*, like the poor enjoy alms. With these directions any body can bud that will.

The South.

CIRCULAR OF THE EXECUTIVE COUNCIL.

To the friends of our cause throughout the slaveholding States we appeal. "The Agricultural Association of the Planting States," has, for its object, the diffusion of knowledge as it appertains to all branches of agriculture and of our pe-

culiar institutions. We desire a closer bond of fellowship that we may develop our resources and be united as one man in our interests.

It has been said that "the world is against us." Be it so. The world, we know, is dependent on us, and we glory in our position. Let us be true to ourselves, and all will be well.

In the discharge of our duty as "Executive Council of the Association," we have fixed the time of the next meeting of the Association to be on Thursday, the 1st day of December next, at Columbia, South Carolina, which will be during the first week of the session of the Legislature of that State. From every slave State gentlemen of distinction have been applied to by us to present essays and addresses before the Association on the various subjects of interest connected with it.

To the Southern Press we also appeal, and we hope that every newspaper will not only publish this circular, but will give their ablest efforts to the cause, time and again, in their editorial columns.

We earnestly desire that all who feel the importance of the work before us, and desire to advance and firmly establish this Association, will send forward their names and initiation fee, which is $5, to Dr. N. B. Cloud, Lockland, Alabama.

The funds raised will be applied to the publication of all the essays and addresses for gratuitous distribution in book or pamphlet form.

Ex. Committee Agricultural Association.

E. A. HOLT, Ala. W. ANDERSON, Fla.
DR. C. BELLINGER, Ala. A. G. SUMMER, S. C.
B. S. BIBB, Ala. J. M. CHAMBERS, Geo.
G. H. YOUNG, Miss.

GEO. R. GILMER, Geo. Pres't. } Ex-officio.
N. B. CLOUD, Ala. Sec'y. }

MUSH.—It is very common to make mush by boiling it only a few minutes. This is all wrong. It should be boiled one or two hours over a slow fire, and if longer, will do no harm. It will be necessary to occasionally add some water to keep the mass thin and prevent burning, and be careful to give it a thorough stirring as often as every five or ten minutes.

CABBAGE—Says the Edinburgh Review, contains more muscle sustaining nutriment than any other vegetable whatever. Boiled cabbage and corned beef make fifty-two as good dinners in 12 months as a man can eat.

Plantation Economy.

[FOR THE AMERICAN COTTON PLANTER.]

No. 10.

DR. N. B CLOUD—*Dear Sir:* I hope I will not be subject to the criticism of *your* readers as I have been by some others. I make this remark because my present opinions may differ from such as I have formerly expressed, and being brimful of errors, open to the sharpshooters and wittlings, even were they such as have two small d.'s to the end of their name. I hope they will take higher game, and not waste their ink and paper on me, for I shall not be deterred from giving mine opinions. I do not mean to treat of best mode of handling cotton—only to give my views of plantation economy in connection therewith.

The question is not now how best to handle cotton so as to make the most money, but how best to manage economically. I have heard it said it is best, every three or four years, that a planter should have some disaster to crop, for no man can keep up his plantation and make a full crop yearly. Is this so or not? My own opinion is, a man is not always making the most when he sells the most cotton, or even when he brings in the largest gross amount. For I think by keeping stock up to healthy point, land up to "good heart," fencing and buildings, &c., &c., in good order, that he may do better than by neglecting all for cotton.

Again, having fully tried making "fair to fine" good cotton, I am satisfied it will not pay. I would, therefore, recommend to gather large weights, even if some trash, and parts of bolls be gathered, only trying for middling or good middling. These qualities my September 25th circular rate at 9½ to 10¼, whereas the first rate at 11 to 12. Of the first kind a hand can gather not over 150 lbs. raw, with care and trouble about gin; whereas, of the middling, he can gather 250 lbs. Ten days necessary to gather 1500 lbs., or a bale of about 450 lbs., within all probability not over 11 cts., or $49,-50; whereas, of the middling, it only takes 6 days to gather the same, worth 10¼, or $46.22, with no extra trouble; and allowing a very fair difference, I think, in the picking, and as to price, fully more difference than we can realize by absolute sales, when prices range as now. Thus, in 14 hands gathering, say 100 bales, there will be a gain or loss of $358, with a difference in time of as 10 is to 6, or if the 14 hands could gather and sell in 4 months of 25 days, the same hands can gather the cheaper cotton in 2 months and 10 days of 25 days, and have 40 days of all hands to improve the plantation. The question is, is it best to push in good weather fearing a disaster to crop, or devote those 40 days to ditching, building, preparing to feed land and stock, or to make the $888 to expend in hire, or to leave undone important matters. I have put field hands to making shingles, and to nailing them on, and can make over $1 per day

at either, at current rates. I know of what I speak. But more than this. I have, in the past month, the week of 13th to 18th inclusive, picked 25,519 lbs.: 139 days, work old and young—an average of 184 lbs.

Similar cotton I sold same week at gin-weights, in Vicksburg, at 9½, and another in New Orleans at 10½, with 7 lbs. loss per bale; 9½ in Vicksburg is equal to 10½ in New Orleans. If I take ten of my best hands they averaged, that week, about 275 lbs. Suppose, now, I had been picking for fine cotton, I could not have averaged 100 lbs., and others left 12,000 lbs. in the field subject to loss. But again, how much would this 12,000 lbs. have lost by drying, even, if not a pod had been lost or injured by the preceding week of rains? Had it lost ten per cent., then would I have lost the profit.

Could all men be induced to plant for only six bales, we then could afford better to handle cotton, yet there would be only a higher grade fixed by purchasers, and the fine cottons being of only limited demand, the price could not be maintained. My friend, Colonel Reuben Collins, who, in former years, used to get some 12½ cents for cotton, while the rest of us only got 8, has acknowledged it would not pay, he making, I am inclined to think, about 4 bales per hand, as some of us rate hands, whilst we sent off 7 to 8, or even 9. Ten of our hands made 80 bales, selling at $2,580, whilst ten of his, making 40 bales, sold at $2,000, or gives him 5 bales per hand, or 50 bales, and barely made $2,500. There is this difference, and none about here will deny, I think. I have certainly cultivated 8, 9 and 10 acres per hand, and have averaged over a bale of 400 lbs. per acre. What will prevent making 8 bales?

I am only endeavoring to establish a principle, and with the view of enabling one and all to have more time to devote to "internal improvement," for, though a democrat of the "straightest sect," I am a strong advocate for "internal improvement," "banks," and a "high tariff," though not by the General Government. Let every man put his barns, fences, ditches, land in first rate order, make large and many manure banks, and import no pork, beef, tallow, mutton, mules, and of such, we will soon, very soon, see our people taking their proper position before the world. I may be in error—if so, I assure my brethren I am deceived. I never have deceived others unless deceived myself, and, therefore, I can fearlessly ask for the same measure I am ever willing to mete unto others.

That our own land may thus take position, my hopes can alone be shown by the labors I have performed. I believe my agricultural brethren will, by a large majority, award to me the desire to see this, and if I have not labored well, I have at least long.

With respect, &c., I am yours,

M. W. PHILLIPS.

Grass is not so nutritious in wet weather as when it is moderately dry. It contains too much water.

[FOR THE AMERICAN COTTON PLANTER.]

Culture of Lucerne.

TUSCALOOSA, July 21, 1853.

DR. N. B. CLOUD—*Dear Sir*—In the May number of your paper I notice an article by W. B. Bingham, of North Carolina, on the culture of Lucerne, and every statement it contains has, no doubt, been verified by the writer in the latitude in which he lives; but his system of culture will unquestionably mislead those who may attempt it in Middle and South Alabama. Through a period as far back as Mr. Bingham dates, I have grown lucerne, but have never succeeded with it when sown broadcast: nor will it do well here on all good corn land. It is more a lime plant than clover, (neither of them is a grass,) and a cow will give more milk when fed on it, than can be attained by the use of any other food I have ever seen. I cultivate it in drills twenty-seven inches apart, the ground being thoroughly prepared and broken, never less than fourteen inches deep, until made fine as garden mould, which may be done in two ways. If the plot of ground be small, use a pronged spade, an instrument with three prongs, each fourteen inches long, having a strong socket and helve, the width that of a common spade, than which it is easier and much more perfect in its operation. If the lot of ground be too large to prepare in this way, use the subsoil plow, succeeded by the roller and harrow. To keep up a vigorous growth of lucerne, it must be deeply coultered annually, and top-dressed with rich, well rotted compost or stable manure, and every two or three years with lime or ashes. Neither drought or cold will destroy it in this climate, and when the year has been favorable, I have cut it five times. It should be sown in October, and kept clear of grass and weeds by the hoe, if necessary. Crab-grass is its greatest enemy in this climate. I consider it more valuable than any of the grasses.

Very respectfully,

BENJAMIN WHITFIELD.

From the Southern Cultivator.

Yellow Clover---its History, Management, &c.

MR. EDITOR—Believing that it will be highly interesting to Southern Agriculturalists,—from the great desire manifested in various quarters to procure seed, and to learn the history and value of the plant—I enclose you a very full and satisfactory letter, written by J. G. Snedicor, Esq., on the subject of Yellow Clover. Mr. S. is an intelligent and respectable planter, residing in that portion of Greene County which lies in the fork of the Black Warrior and Tombigbee rivers, in the vicinity of Eutaw, and in latitude 32½°.

You will observe that the letter is in reply to certain interrogatories which were proposed to Mr. S. by myself, for the purpose of obtaining the results of his observations and experience with

this grass, which I had learned he had been cultivating for some years.

Mr. Snedicor, and your valuable correspondent, Rusticus, (in the 7th volume of the Cultivator,) agree in their statements respecting Yellow Clover, as far as the latter goes, except in its first appearance. But Mr. Snedicor's account of the plant is more in detail, more complete, and must, therefore, give more satisfaction. There is another important difference between the two. Mr. Snedicor's experiments apply to the central portion of the cotton growing belt, say 32½ deg., while those of Rusticus were made in the extreme southern portion of that belt, (Liberty, Amite county, Mississippi,) the place from which he dates, being but a few minutes north of 31 degrees.

Crops which will increase the supply of food for stock, and at the same time renovate our depleted soils, are the great wants of Southern agriculture. The apathy and negligence heretofore so prevalent, can no longer find a fortification in the non-adaptation of our climate to those means of improvement which have been so successfully used in more northern latitudes for the amelioration of soils, and for rearing superior breeds of stock of all kinds. Numerous experiments, made by planters of intelligence and enterprise, many of which have been published in your valuable journal, conclusively show that in the family of grasses, and in the field pea, second only to the grasses, the South can find varieties for most of the defects of a vicious husbandry. Nor can this apathy and negligence find any to urge an excuse as it has heretofore been disposed to do in our peculiar institutions. It is directly opposed to all theory and reason that labor, which we can command at our will, should be incompatible with improvement of any kind, least of all, agricultural improvement. Your own noble State has removed an opprobrium which 'till recently attached to the institution of slavery, viz: that it presented an impregnable barrier to the rapid growth of a State, in wealth, population and prosperity. Georgia claims the honor, and she should be honored for it, of having obliterated this reproach, and proved, beyond doubt, that like causes will produce like effects, whether in a free or slaveholding State; that industry, energy, enterprise, internal improvements and manufactures, will make a slaveholding, as well as a free State, populous, rich and prosperous. And so it will be found in our husbandry. Here are the means with which a munificent Providence has furnished us; with becoming zeal, perseverance and industry, our agriculture will realize the most sanguine hopes of its friends.

I remain yours, truly,
ISAAC COOOM.

Greensboro', Ala., March 25, 1851.

DEAR SIR—I received yours of the 24th December last, in due course of mail, and would have answered it at an earlier period, had my health permitted. Your questions in relation to the Yellow Clover, I will answer as well as my experience will permit.

Your first question seeks to obtain a history of the Clover, how it was obtained, and how long I have cultivated it. The only knowledge I have of its history, I derived from Dr. H. L. Kennon, who, while on a visit to Mississippi some 7 years since, obtained some of the seed from Mr. Kirksey, (a relative,) now deceased. The Doctor stated, to the best of my recollection, that Dr. Kirksey had fenced in about an acre of an Indian old field, near his mill, to keep his oxen in, and that in September the clover made its appearance, and grew so luxuriantly that ample grazing was afforded for the oxen, and two or three milch cows, during the fall, winter and spring.

Dr. Kennon gave me a moiety of the seed he had obtained, which I planted carefully on about two poles of ground, in the interior of a half acre lot. It came up and grew finely, until the latter part of May, when it matured, leaving a quantity of seed detached on the ground. On examination, I found the roots entirely dead, and supposed that it would have to be resown annually, and from the seeming difficulty in collecting the seed, I judged it would not be profitable, and, under this impression, converted the lot into a cow-pen, sowing it in turnips every August, for three or four years. On the third year it became very dense, covering up the turnips while in bloom, and spreading to the confines of the lot. The fourth year it smothered out the turnips entirely, and I was satisfied it was adapted to this climate and our wants, and better suited to a cotton country than any winter grass could be whose roots were perennial, as the ground is as easily broken as that of common stubble, and for the seven years that I have been cultivating it, I find that I have always had an ample stand without re-sowing.

In answer to your second interrogatory, I will state, from my experience, that it should be sown in August. I think it will grow well on almost every variety of soil, except upon wet, marshy land, upon which water lies in the Winter and Spring; it will, however, yield more on rich clay lands. It does well on the post-oak lands. The soil should be well prepared previous to sowing, by a good dressing of stable or other manure, if the ground be old, and thoroughly plowed. The seed should then be sown broadcast, quite thick, and plowed in with a scooter, and brushed or harrowed. A better mode would be to draw a heavy clod-crusher or roller over it, to render the surfac smooth. This should be done about the middle of August, and if by the 10th of September your ground be foul, replow with a light scooter, and

make the surface again smooth. Your clover will then come up in a few days, if the weather be seasonable, and take care of itself. It is difficult getting a stand with this clover the first year, but when once obtained, you have no further trouble with it.

I cannot satisfactorily answer how much seed should be sown to the acre. I put from 20 to 35 gallons to the acre last fall, but owing to the excessive draught it did not come up until after the rain in November. That rain, you may recollect, was succeeded by a heavy freeze, which threw most of the seed to the surface, and I have a bad stand. It is, however, the only fall in seven that the clover has not come up within September. It is almost throwing time and labor away to sow this clover late in the fall, as it comes up badly and grows off feebly. When it gets an early start, cold weather does not seem to check its growth; and it will be from a foot to eighteen inches high by the middle of November on well prepared land.

In answer to your third interrogatory, I will state, that the object in view in my answer to your second, in directing the clod-drusher to be used after sowing, is to prepare for sowing seed. When the clover is fully matured, the seeds fall from the plant, and are saved by raking the straw off, and then, with a common or brush broom, sweeping the seed into heaps of several bushels. They are then passed through a riddle or coarse sieve, sufficiently large in the meshes to allow the seed to escape. This takes out most of the straw and coarser clods and trash. They are then passed through a finer sieve, which, allowing the dust and finer clods to escape, retains the seed in a tolerably clean condition; the state in which they are sold. I find that I may save one hundred gallons (probably more) in a day. One acre of good land, well set in this clover, will yield from two to fifteen hundred gallons.

Your fourth interrogatory is, as to its manner of growth, the number of shoots from a root, and their size and length; and your fifth interrogatory is, what amount of grazing will an acre of this clover bear, and for what period? I will, for convenience, answer the last first; as I have but little experience, I will give that. In November, 1849, I turned six or seven calves on my clover, (it being then about a foot high,) and occasionally from one to three grown cattle, and every Saturday night and Sunday, five head of horses and mules. About the 13th of February, I found it had not been reduced in height, although the stock were very fond of it. I then turned in an addition of all my cattle and sheep, (about fifty head,) and it took until the 1st of March to eat it level with the ground, or as close as sheep and other stock can eat grass—in addition to this, I turned in a number of hogs daily for a few years. My object was to see how it would bear close grazing, and I removed the hogs, as I had not more than an acre, and a bad stand on half of that, for fear they might root it up, and impair the stand. On the 1st of March I took everything off, and about the 1st of June, one of my neighbors (Mr. Holbrook) drew up, without selection, a plant and measured it. It was 7 feet long. Its manner of growing is, therefore, rapid. The size of the straw is about the same as that of red clover. Its shoots are numerous from each root, and it grows as thick as it can stand on the ground. It matured last year about the 20th of June; previously I never pastured it, and it matured some time in May. You can, from the size when I commenced grazing, and its growth after the stock were taken off, infer the period it might have been grazed with more accuracy than I could.

Your sixth interrogatory is, what quantity of vegetable matter will be restored to the earth when not grazed at all, and what amount when grazed until the 1st of March, April and May? It grew rapidly in the fall and winter, and yields a large return of vegetable matter, and a denser shade than any other grass I ever saw, both of which have a fertilizing influence. My first crop was sown in drills, and only grew in the whole season, about seven feet. The only additional fertility was given by the clover.

I will state that my experiments have been on ridge land in the river bottoms—growth, chesnut, pine, gum, maple, a variety of oaks—not much sand, not resembling the black lands in color, and the clay of good quality, of a reddish cast, and containing but little sand. This land was, from the first, in as good condition as manuring and plowing could make it.

In answer to the seventh interrogatory, I will state, that the seed may be delivered in July and early in August. Price, $1 per gallon, dry measure.

The good judgment manifested in yours, and the close application of your questions to the subject matter, makes me regret that I could not answer it earlier and more satisfactorily.

I am respectfully yours,
J. C. SNEDICOR.

To Col. Isaac Croom.

Catalpa, Greene Co., Ala., March 15, 1851.

Pea Soup.—The liquor in which a leg of mutton or a calf's head has been cooked makes good stock. Put this on to boil, slice into it a head of celery, a carrot, and turnip, with two onions; boil the peas in fresh water, putting them in when it boils fast; and when they will mash, add them to the broth, with a crust of bread the size of a roll. Boil for half an hour; then run through a sieve, and season to your taste.

Horticultural.

Orchard and Garden.

HINTS FOR SEPTEMBER.

ORCHARD.—These who design planting fruit trees the present Fall, should now be preparing their compost heaps. Nothing will be found better for this purpose than swamp muck or leaf mould, placed in alternate layers with ashes and lime, or ashes alone in the proportion of a foot thick of muck or mould to an inch of ashes and lime. For the quince or pear on quince a little salt may be added. It is a good protection when cleaning out the garden or yard to draw all the weeds and trash into heaps to rot instead of leaving them scattered over the ground. Nothing answers so well for the basis of compost as these heaps when well rotted. Budding should now be done without delay. See directions for performing this operation below.

GARDEN.—The directions given last month will also do for this. Sow Landreth's large York cabbage—plant beans, potatoes, &c.—sow turnips, onions, carrots, spinach and radishes. Transplant lettuce, cauliflower, broccoli, &c.

BUDDING.—Select your "stock of buds" from a healthy shoot of the present season's growth, and cut off the leaves so as to leave about half an inch of the footstalk attached to each bud.

Having previously provided yourself with a sharp pocket-knife slightly rounded at the point, and some strips of moistened corn shuck or old "domestic," make an incision longitudinally one inch long quite through the bark, on that part of the stock where you wish to insert the bud, and cross this first with another at the top, so that both together shall present a shape similar to the letter T, or it will be better in making the cross incision, to elevate the back of your knife blade so as to make the cut in a semi-circle with the convexity upwards. Now place the edge of the knife a little above the cross-cut, and cutting more slantingly downwards than before, take out a very small portion of the outside of the bark. This will greatly facilitate the insertion of the bud. If your stock is small and growing thriftily, and your buds mature, you can insert them without raising the bark with your knife—otherwise you must loosen the bark next the incision a very little with the point of your knife blade. Now cut your bud from the "stick" by placing the edge of your knife about half an inch above the bud, and cutting downward to half an inch below the bud, taking a little of the wood off with the bud—not much, however. Insert the foot of the "bud" thus cut into the cross-cut in the stock, and push it down till it reaches the bottom of the longitudinal incision. Wrap with the strips of the shuck both above and below the bud germ, and the work is done. Remove the shuck in two weeks and if the bud seems alive and firmly attached to the stock, you need not renew the tying. As soon as the sap starts in the Spring, cut off the stock one inch above the bud. If the shoot from the bud does not grow upright, tie it to the part of the stock which projects above the bud, and as soon as your shoot has sufficient growth to maintain its proper position, cut off the stock close down to the bud.

[FOR THE AMERICAN COTTON PLANTER.]

Profits of Fruit Culture.

DR. CLOUD—*Dear Sir*—If, as we have already seen, the business of fruit-growing can be made a highly profitable one in the North, where land is so much dearer, and fruit so much cheaper than with us, is it not rational to conclude that we, too, might find it sufficiently remunerative to repay attention? I think so, and this being admitted, the only questions which present themselves for answer are these: Can good fruit be successfully raised here? and will the present high prices of fruit in our Southern markets be maintained? Both of these queries are, in my estimation, very easily disposed of. All will admit that ours is one of the best climates in the world for the pear, peach, fig, &c., the only fruit of importance about which there is the slighest doubt being the apple.

Having been born and "raised in one of the best apple growing regions of the Union, I have had abundant opportunity to become acquainted with the various merits of this fruit as grown by the most successful cultivators of the North and East, and yet I am fully convinced that nowhere have I seen or eaten better or handsomer apples than in this favored land of the South.

It is true that a great many superior Northern varieties do not attain their highest perfection with us, but it is equally true that many of the most excellent foreign sorts are far better here than in the land of their origin. Ohio, Indiana and Illinois are fast becoming the greatest apple growing States of our Union, and yet from much personal observation, I am quite sure that Mississippi, Alabama and Georgia are a better apple growing country than either of the above named States. Certain it is, that we are measurably exempt from the most inveterate enemy with which they have to contend, viz: the "bitter rot." As a proof positive that good apples can be successfully raised in this climate, and profitably disposed of. I will merely add that, from a very badly managed orchard in this vicinity, containing only about 100

bearing apple trees, there was sold, the past season, in Yazoo City and New Orleans, about $1000 worth of fruit! And the quality may be judged of from the fact that most of it sold readily enough at $1,25 per bushel, and single specimens frequently at 10 cents each! From another orchard of about thirty or forty bearing trees, nearly $400 worth was sold at from 60 cents to $1 per bushel. Both of these orchards will, this year, do even better than this! To what other use, let me ask, could these 10 or 15 acres of land be put to to yield so great a return for the labor expended? Nor are these isolated instances—a great many small apple orchards in this State usually average from $10 to $12 per tree annually, and several pear trees, within my own knowledge, have yielded fruit to the amount of $50 each in one season. From these and many similar instances, I am fully persuaded that, with proper discrimination in the selection of varieties, there is no country in the world that offers greater inducements to engage in the culture of good fruit than ours, especially while prices remain as at present. The only remaining question is, will such prices be maintained? Of this I think there can be no doubt. Fruit has been cultivated more or less extensively in New York and Massachusetts for upwards of a century, and yet 2 years ago pears sold readily in the Boston market at $3 per dozen, and in the New York market, the past winter, at from 75c. to $1 each! Good apples also have been easy sale at $9 per barrel in New York.

How long will it be before good fruit, apples and pears particularly, will be as plenty in New Orleans, Mobile, Charleston, and Savannah as it is in Boston, Philadelphia and New York. And how long will it be before our own citizens become less extravagant in the purchase of good fruit than their Northern neighbors? Until both of these events take place, I think that the most profitable part of every Southern farm or plantation will be that devoted to the orchard and fruit garden.

But I will not dwell longer upon this subject. I have hurriedly dotted down a few facts and conclusions which I sincerely hope may lead others to give this matter of fruit raising in the South a more liberal share of attention than has hitherto been bestowed upon it.

Earnestly hoping that all such investigation may prove as satisfactory with others as with me,

I remain yours, most cordially,

H. A. SWASEY, M. D.

P. S. I will, if desired, give in some future number of the Cotton Planter a list of such apples, pears, peachas, plums, &c., as have been proved worthy of cultivation in this climate.

☞ We should be glad to have such catalogue.—[Ed.

[FOR THE AMERICAN COTTON PLANTER.]

Barnacles on Apple Trees.

Dr. N. B. Cloud—*Dear Sir*—The apple tree is occasionally attacked with an adventitious substance, composed of woody fibre, surrounded with a corticular substance, adhering to and surrounding the roots of the tree, which deteriorates and impoverishes the tree, and prevents it bearing fruit. Occasionally the tree is surrounded with this substance immediately under the surface. For the want of a better term I call them *barnacles*. The tree is easily restored to its flourishing and fruit bearing condition by removing the barnacles with the grub hoe, spade and pick-ax, leaving the holes open, and refilling them with coarse manure, tobacco stalks or leaves, and leached ashes, &c. The Fall season is a good time to remove them, and fill the holes during the winter; the next summer the tree will yield a profitable return in fruit.

Also, I believe, I promised something about cucumbers. Many fine vines are killed by watering them. The following will not fail to produce plenty during the season: Dig pits, say two feet square and two feet deep, put a stick three or four inches in diameter in one corner, or at the side of each pit, long enough to extend from the bottom of the pit, five or six inches above the surface; fill the pit half full of coarse trash, and then with good compost manure within two inches of the top—finish with common soil—plant your seed 15 or 20 to a hill to insure a good stand, thin out to three or four vines, during dry weather remove the sticks and fill the holes with water, replace the sticks, replenish as often as required; this insures a moist soil for the roots, and affords a constant supply of gas from the decomposing trash.

* * *

Greenville, Butler Co., Ala., Aug. 10, 1853.

[FOR THE AMERICAN COTTON PLANTER.]

Solanum Tuberosum.

DR. CLOUD—*Dear Sir*—Among the many and varied productions of our extensive and fertile country, whether native or exotic, none occupies so prominent a position and exercises so salutary an influence as the simple Bulbous root, called and known as the Irish Potatoe. Whether we look at its natural history or the influence it has in ameliorating the condition of our species, we shall be at once convinced of its superiority over every other esculent vegetable production on the globe. This is one of the boons derived from the new world. This is one of the benificent results of the discovery of America. It is a native of Chili, and like many other vegetable productions, has been greatly improved by transplanting it to other soils and climes. Long after its introduction into Europe its price was high, and, consequently, confined to the tables of the opulent. It gradually, however, won its way to public favor, until, at present, it feeds a third part of the population of Europe and America. It grows in almost all climates, except the Frigid Zone, but it delights most in loose and friable soils, but it refuses not to yield its crop to any and every soil, and I might add, almost no soil. Look at its beautiful stem, supporting its cerulian flower and its transparent berries; open the soil and see what numbers of beautiful white or golden apples it will yield. Carry them to the kitchen and subject them to the culinary art, how rich and luscious the food, not only for man, but beast. Subject them to the Alembic, and they easily yield the inebriating alcohol; and then what snow white starch it affords to the lawn dress. These are some of the properties of this singular and nutricious root. But these are not all. Since and cotemporaneously with its introduction into society, commerce and civilization has received an impetus which will not cease to operate as this beautiful, rich and nutricious root shall be cultivated. The African can boast of the tall palm tree, which yields clothes, bread and drink, and other useful appendages, and while the palm tree may adorn the arid plains of Africa's parched soil, and yield its fruits precariously, our potatoes can be reared annually and in any quantity. Let the Frenchman and the Spaniard boast of the olive and the grape, the one a gross and insipid food, the other ministering only to the orgies of the bacchanal. Compare it with the bannana or the golden limes and oranges of the Mexican Archipelago. Here we find beauty alone joined with its cooling and refreshing juices, but alas, no life sustaining principle compare with our incomparable maize, and even to that it is superior as being meat and bread, too. Behold the maize, waving her tinselated crest to the winds, surrounded by millions of the insect tribe, reveling in its sweets. See her body adorned with the scarlet or white silk zone depending from rich and lactiferous ears, almost touching the earth with the richest gifts of Ceres—but with all this glory, our corn cannot rival the potatoe in abundance of nutriment and the universality of its favoritism. It is the favorite food of the English lord and the Irish peasant. It feeds himself and wife, his children, his pig and cow. It is true that in our hemisphere we use it only as a luxury, not as an inestimable article of food, but it is not less influential on that account, for it is the promoter of commerce, harmony and friendship, and is destined to be the lasting cement of this noble union, wherever it is esteemed and cultivated. There religion and civilization go *pari passu*. There the arts, sciences and education follow and progress with accelerated strides. Talk not of your cotton or your hemp, for these, to-be-sure, set in motion thousands of our inventions for the purpose of administering to our pride and vanity. They sustain not life, they give not health, but in their production and manufacture, entail on thousands of people poverty, sickness, and death. Talk not to me of the banana or the palm tree. They grow only in the torrid zone, where the indolent Indian and African live in a state of nudity, unawakened by industry, which calls forth the intellectual powers of the human race. Where the potatoe grows, man does not sit in his cabin gathering the spontaneous production of the earth, asking no greater luxuries, and proposing no higher aim than to sit and sleep, keeping himself where he has been for ages, little elevated above the inferior animals, whilst the potatoe eater, under his cooler skies, and with a less fertile soil, has surrounded himself with all the blessings of society, its comforts, its affections, its virtues, and its intellectual riches. Grow the noble root, and whilst sustaining, civilize the world. *

Miscellaneous.

[FOR THE AMERICAN COTTON PLANTER.]

Professor L. Harper's Instruction for the Selection of Specimens of Soil for Chemical Analysis.

For a qualitative or quantitative analysis and the examination of soils with respect,

1. To its density or specific gravity.
2. Its absolute weight.
3. Its relative proportions of gravel, soil and clay.
4. Its power of absorbing and holding water.
5. The rapidity with which it dries, and lastly,
6. Its power of absorbing the heat of the sun.

About 4 pounds in an air-dry state are necessary. These 4 pounds of soil must not only be collected in one place, but in several places of the same field. It is very seldom that the same field, if it be of some considerable size, contains everywhere exactly the same soil, there exist generally several varieties; 1 or 2 pounds of soil should, therefore, be taken from every one of these varieties, or if such varieties are not easily to be ascertained from at least 6 or 8 different spots of the field, and put together in a clean and neat tray or any other suitable

and capacious vessel. If the surface soil only shall be examined, the soil may be taken from the surface only; if surface and subsoil shall be analyzed, the specimens should be taken from both in an equal proportion. If the soil is to be analyzed with respect to the cultivation of a certain vegetable, the specimen may be taken from surface and subsoil as deep down as the root of that plant generally reaches. For instance, if the soil of a field is to be examined with respect to a certain disease of a plant which shows itself invariably in the same field, the specimen of soil must be taken from surface and subsoil as deep down as the roots of that plant generally reach. If only the soil of certain poor and infertile spots of a field is to be analyzed, of course the soil has to be taken from those spots only.

The specimens from all the places in the same field having been taken, and the precaution used to admit an average quantity of gravel, stones, vegetable matter, etc., contained in the soil, all the specimens are thoroughly and carefully triturated and mixed, and from the whole so much only taken as will constitute about 4 pounds when dry; the latter quantity taken from the whole must then be dried either in the open air or before the fire on a clear place and in a clean vessel, or upon a clear sheet of paper, (no newspaper,) where no dust or other foreign matter can mix with it, until it is perfectly air-dry. If the specimen shall be sent to a distant place it must be tied up in clear paper, (no printed paper,) or better in a clean piece of linen or cotton cloth, or better still, put in one or two perfectly clean and dry bottles, well corked, and sent in a small box to the analyst, who is to be informed how the specimen has been selected.

Everything destined to be submitted to a chemical analysis, must be kept perfectly clear, and even free from dust; the slighest impurity will render the analysis unreliable.

[FOR THE AMERICAN COTTON PLANTER.]

That Paradox.

DR. CLOUD—*Dear Sir*—In the mode of planting proposed by your correspondent "H.," there is no particular advantage except that each plant stands in the center of a six sided area instead of a four sided one. And this advantage is far more than counterbalanced by the disadvantage of the the closeness of the rows and the consequent difficulty of working a crop so planted. It is true that this quincunx planting will give about 12½ per cent. more plants to the acre, but it is also true that each plant occupies only seven-eights as much ground as in square planting, although they may stand the same distance apart.

Hence what is gained by the number of plants, is lost by the less space they occupy. At four feet apart each way, in square planting, each plant occupies 16 square feet, while in the quincunx planting proposed by "H.," the plants may stand 4 feet each way, and still occupy only 13.84 square feet each. It is mere fancy work at the best.

Yours as ever,

H. A. SWASEY, M. D.

P. S. I have written the above in no fault-finding spirit, but to correct any false impressions that friend "H's" remarks, *left as they are*, might create in the minds of your *unscientific* readers.

The following article from a genuine friend of improvement is not strictly in accordance with the objects of an agriculturel paper. It is entirely respectful, however, and we publish it, remarking to our friend "R. C.," that it smacks too much of a religious controversy, which, with politics, we intend to have nothing to do. Each of these sources of endless controversy have their respective battle fields, in neither of which crusades are we willing to enlist the Cotton Planter.—[ED.

[FOR THE AMERICAN COTTON PLANTER.]

Reply to Mr. Price's article, "The Moral Benefits of Slavery."

DR. N. B. CLOUD—*Dear Sir*—A piece appeared in the June number of your valuable monthly, the Cotton Planter, that was originally sent to the Merchants' Magazine, written by Mr. William S. Price, on "*The moral benefits of Slavery*," that I must beg the privilege to notice a little. I think it deserves an abler review than I can give it, and I hope will obtain one, if it has not already. I am quite an advocate for slavery, knowing that it has been recognized by the Divine Ruler of the Universe, and by many of his servants in all ages. In his division of the subject, Mr. Price proposes first, to consider the moral benefits of slavery, its design and effect as is set forth in the universally acknowledged book of morals, as he terms it, but I think he could have given the Bible, the Book of God, a more appropriate title, but let that pass. Second, he says that it is the true, speedy and successful method for civilizing the heathen. On this part of his theory we join issue with him. He says we have no evidence that any other plan has succeeded to any great extent; it is true that the Christian Churches discourse eloquently in regard to their exertions in behalf of the heathen, but judging by the fruits of their labors at home, the plain inference is, that little had matured abroad. These remarks are calculated to astonish the world, to think that any man, not only in the United States, but in any part of the world where the gospel of peace and salvation has shed its rays, should utter such sentiments. The author has surely proven himself to be sufficiently ignorant of what has been and what is going on in the world to have just

made his exit from some other planet. What, condemn the gospel and all the glorious benefits resulting therefrom, which makes the great contrast between the civilized and christianized part of the world and the heathen part thereof? Will the gentleman be good enough to inform us what nation, either in ancient or modern times, has been benefitted as a nation by being enslaved? We have a hope that African slavery may yet prove a national blessing to poor, unfortunate Africa. It has aided in blessing thousands of Africa's sons and daughters, but it is the blessed gospel of salvation that has proved the blessing to them. If slavery itself was designed by the Almighty to be a blessing, the sentence of slavery upon the descendants of Ham would not have been accompanied with a curse. We will make another quotation from Mr. Price before we are done with the one already made, so that we may take things in the order of time. He says, "permitting history to be our guide, we must conclude from the municipal laws found necessary to govern the Hebrews, that the chosen people of God were a very depraved heathen previous to their becoming slaves to the enlightened Egyptians. Although subject to the instruction of that enlightened nation for four hundred and thirty years, yet we find when they are entrusted by Providence with self-government, that they were wholly incompetent," &c. It appears obvious to me that this proves just the reverse that Mr. P. is aiming to prove by it. He wishes to make it appear that the Israelites were very ignorant after they came out of Egypt and out of bondage, and infers from their ignorance then that they must have been a very depraved heathen previous to their bondage. How much more reasonable, I think, would be the inference that they became ignorant while in bondage. He says they must have been a depraved heathen previous to their bondage. All bible readers know that the first of God's chosen people, the Israelites, was Abraham, then Isaac, then Jacob; from the last came all the Israelites. Mr. P. has it that the good old patriarchs whom the Lord condescended to so particularly instruct, and who were such faithful servants of the Lord, were very depraved heathen. Let the gentleman show, if he can, that the good old Patriarchs or the Israelites at any time were not as well civilized as the Egyptians that he speaks so highly of their civilization. I would say that when they were christianized, they, the Israelites, were better civilized than the Egyptians. The subject would admit of writing a volume—therefore I can, in this piece, merely touch at any point. Mr. P. is deep in error. Will he please take some of the religious publications of the day that he may become acquainted, in some degree, with what the churches are doing, and have been doing for many years, aided by a divine hand. He appears to know nothing of the many thousands that are converted from the error of their ways every year, both in our own country and in foreign and heathen nations. Of the thousands of missionaries that are doing such immense good, and of the millions of money that is raised annually by the churches and expended in the best possible manner for the good of mankind, both in time and eternity.

Is it not a matter of astonishment to behold the rapid march that the civil and religious worlds are making? Does not every civilized nation in a national capacity also join the churches to promote the advancement of moral and religious liberaty? Is it not the advancement of civil, moral and religious liberty that has caused so many crowned heads of Europe, and, we may say, Asia, too, to tremble on their thrones, and some of them and their thrones to fall to the ground, not excepting the mighty Pope. Mr. P. says if the Europeans had persisted in enslaving the aborigines of America it would have proven a blessing to them in the end—that is, to the Indians. I think we have little grounds for such a supposition. Does not almost everybody know that the Indians of America cannot stand oppression? that they soon sink under it? Does not Mr. P. know that many thousands sank under the bondage that was imposed on them by Spain annually? that in a few years a number of nations became extinct? Does he not know that by the slight oppression from the Americans that they have had, that many nations have almost become extinct, and, I believe, some altogether; and yet Mr. P. holds forth that this Government is culpable for not enslaving and civilizing them. Also, that little or no good has resulted from the efforts made by the churches as well as by the National Government to advance them in civilization. I think the gentleman is so deep in error, here as other places, that it is almost useless to try to get him out. It is well known that the Indians generally have had a bitter feeling towards the whites from their intruding on them and pushing them back. It has gone very hard with them to leave their native homes, their hunting grounds, and the soil where their parents were buried, although it was far best for them to emigrate to new countries. This hostile feeling was much promoted in them against the citizens of the Colonies and the United States by the Europeans, that were enemies to the whites here. That has been one great reason why the Indians have made such slow advancement in civilization. Of course when they had no love for the whites they were not apt to learn from them. Another thing that has done much to retard their civilization and christianization, is intoxicating liquor received of the whites; also bad examples and precepts from bad white men. That, considering all the obstacles in the way, the improvement of many nations have been greatly enhanced. The gospel has done more for them, accompanied by divine aid, than everything else. It has long since been demonstrably proven that the best way is to take the Gospel to them in their native state, get them converted, made true christians; then, with proper instruction, they will generally make speedy advancements in civilization. A number of nations are using considerable exertions themselves as well as improving the aid given them by the churches and the United States for their

improvement. We often see very favorable accounts in a moral and religious point of view, from them. They have hundreds of preachers of the Gospel among them, and thousands of church members, a great many good schools, &c. All are certain the church does not merit the odium which Mr. P. endeavors to entail on it. He has not only slandered the churches, but has condemned the inestimable blessings of Deity, has endeavored to throw aside as useless all the means of grace, and the influence of the Holy Spirit. I must come to a close, although I would prefer writing five times as much in order to have some chance to do justice to the subject. I have written what I have entirely with a view to arrest error and promote the good of man. I have no bad feelings I know, against Mr. Price, but trust and hope Heaven's choicest blessings may attend him in time and eternity. R. C.

TALLADEGA, Ala.

From the Boston American Railway Times.

The Iron Trade of the United States.

The iron trade of this country is, as we believe, yet to become one of the most considerable, if not the greatest business in the country. It has met with checks and disasters it is true; but disaster and partial failures are more often the ground work of the highest success than otherwise. The history of every new enterprise vouches for the truth of this. We have had experience enough to guard against some of our errors of legislation with regard to this great interest. It would be a happy thing for the country, if the tariff question could be taken out of the hands of the politicians, and the question of requisite protection of American industry left to be settled upon its own merits, and this we yet hope to see with regard to our iron manufactures. Probably in January, 1855, we shall, in the United States, have full 15,000 miles of railway in operation. Our railway building was commenced about 1830, and the progress has been pretty regular since that time, if we except the past year or two, when the per centage of increase has been large and rapid. In January 1st, 1853, there were 13,847 miles of railway in operation, and 10,418 miles in construction. Of the last item it is not out of the way to say that something like 3,000 miles will be finished in January, 1855. If we allow 100 tons per mile for ironing a single track railway, this would give a total of 1,600,000 tons of railway bars, now or soon to be in use. But there is a very considerable amount of double track railway in operation, and more in construction. Let us call that an extra hundred thousand tons—which is far below the actual fact—and we have a total amount of 4,700,000 tons. This at $65 per ton, present prices, gives a total of 110,500,000 invested in railway bars in use. From experience it is safe to set down the deterioration of the rail at 8 per cent. per annum. We fear that our later importations will show even greater deterioration. Eight per cent. wear and tear would be 128,000 tons per year, or over eight and one quarter millions dollars, and the amount for the ten subsequent years, allowing nothing for double track, and nothing for increase of railway track, would be 1,580,000 tons, or 83,200,000. In our opinion the sum of one hundred millions of dollars would come nearer the demand for this single item of railway wear and tear. We wish it to be understood the amount of railway likely to be in operation in January, 1825. We have allowed nothing for double track, nothing for turnouts. By January, 1860, there will, in all probability, be in operation in the United States, 30,000 miles of railway. Between now and that period we shall have to furnish the iron for some 19,000 miles of new track, and certainly as much as eight per cent. per annum of the amount now in use. Altogether it is a magnificent sum. We have said nothing of the multiplied uses for iron for cars, locomotive, steam engines, machinery, steamboats, iron sailing vessels, iron buildings, etc., etc., which altogether, go to swell the consumption to an almost unlimited amount. We have had something to say, heretofore, with regard to the importance of our iron manufacturers, urging upon the present as the best moment for starting and extending their works, and trust they will do so. Hardly a day passes that we do not hear of some new iron enterprise, and wish to impress upon the country the importance of sustaining it. We call upon the country to take this question of protection of our iron manufacturers out of the vortex of party politics, and settle it upon its own merits. Nothing like protection is wanted now, but the time may come when, in consequence of the organized movements of the foreign manufacturers, our manufacturers may need it. Let the country be wise and give it. The present and prospective demand for iron, both in this and other countries, is so large as to prevent any immediate falling off in prices. Let our manufacturers take heed of the opportunities of the next few years. By carefulness and economy, and with the aid they cannot but reap from experience, they will eventually be able to maintain themselves againt foreign competition. Once established, we have the facilities for supplying our own consumption of iron, as we have long had of manufacturing our own cotton cloths. Almost every locality in the Union has iron and other ores. Some of the States are rich beyond value in this and other minerals. When our manufacturers reach the point of supply at a profit they then begin to compete among themselves, and then the price drops to the mean and fair value. With the aid of new inventions and a few year's experience, the iron manufactures of this country have nothing to fear. But should the in-

terest need fostering and protection against foreign competition—and we do not believe it will—the whole people are bound by self interest to give it.

From the Alabama Journal.

Premium List of the Montgomery County Agricultural Society.

To be held in the City of Montgomery on Wednesday, the 12th day of October, 1853.

SAMPLES OF FIELD CROPS.

For the best bale of cotton, (500 lbs.).....$5 00
" " largest crop of corn grown upon one acre.....5 00
" " best one bushel of corn in ears.....2 00
" " " and largest variety of field peas.....2 00
" " " one bushel of field peas.....2 00
" " " bale of pea-vine hay, (200 lbs.).....2 00
" " " bale of any kind do. (200 lbs.) made in Alabama.....2 00
" " " one bushel of oats, rye and barley, each.....2 00
" " " one bushel of sweet potatoes, turnips and ground-peas.....2 00

CATTLE.

For the best bull, without regard to blood, 3 year old, or upwards.....5 00
" " " bull, without regard to blood, between 1 and 3 years old.....5 00
" " " bull calf, without regard to blood, under 3 years old.....2 00
" " " milch cow, without regard to blood...5 00
" " 2d best milch cow, without regard to blood.....3 00
" " " heifer, without regard to blood.....3 00
" " 2d best heifer, without regard to blood...2 00
" " 2d best heifer calf, without regard to qlood.....2 00
" " " single yoke of work oxen.....5 00
" " " fat steer.....3 00

HORSES.

For the best stallion over 4 years old.....10 00
" " 2d best stallion over 4..... 5 00
" " best horse colt under 4..... 5 00
" " " brood mare..... 5 00
" " " filly, 3 years old..... 3 00
" " " pair of matched horses..... 5 00
" " " single harness horse..... 3 00

JACKS AND JENNETTES.

For the best jack.....5 00
" " " jennette.....5 00
" " " mule over three years old.....3 00
" " " mule colt.....2 00

SHEEP.

For the best buck.....3 00
" " " ewe.....2 00
" " " fat sheep.....1 00

SWINE.

For the best boar.....2 00
" " " sow.....2 00
" " " pair of pigs.....2 00

POULTRY.

For the best pair of fowls of any variety.....2 00
" " 2d best pair of do. of any variety.....1 00
" " 2d best pair of geese, ducks and turkeys, each.....1 00
" " best coop of pigeons.....1 00

PORK, BACON AND BEEF.

For the best half-barrel pickled pork put up in Alabama.....1 00
" " best half-barrel pickled beef put up in Alabama.....1 00
" " best bacon ham, regardless of age, cured in Alabama.....1 00
" " 2d best bacon, without regard to age, cured in Alabama.....hon'r

DAIRY.

For the best jar of fresh butter, (not less than 5 lbs.).....1 00
" " 2d best jar of fresh butter, (not less than 5 lbs.).....hon'r
" " best cheese made in Alabama.....1 00

HOUSEHOLD DEPARTMENT.

For the best jar of lard, (not less than 10 lbs.)...1 00
" " best 10 lbs. soap made in Alabama.....1 00
" " best jar of pickles, preserves and jellies.....1 00
" " best loaf of wheat bread.....1 00
" " best loaf of corn bread.....1 00
" " best lot of fruit, pound or other cakes.....2 00
" " best bottle of wine made in Alabama.....1 00
" " 2d best bottle of wine made in Alabama...hon'r
" " best bottle of cordial made in Alabama.....1 00
" " 2d best oottle of cordial made in Alabama..hon'r

ALABAMA MANUFACTURES.

For the best piece of cotton osnaburgs.....1 00
" " " " " sheetings.....1 00
" " " " " shirtings.....1 00
" " " " " kerseys.....1 00
" " " " " stripes.....1 00
" " " " " plains.....1 00
" " " " " bed ticking.....1 00
" " " cotton mattress.....1 00
" " " shuck mattress.....1 00
" " " moss mattress.....1 00
" " " plow-line.....1 00
" " " cotton yarn.....1 00
" " " sewing cotton.....1 00

NEEDLE, SHELL, WAX AND FANCY WORK.

For the best patch work quilt in silk.....3 00
" " 2d best patch work quilt in silk.....1 00
" " best patch work quilt in cotton.....2 00
" " 2d best patch work quilt in cotton.....1 00
" " best silk fringe.....1 00
" " 2d best silk do.....hon'r
" " 2d cotton do.....1 00
" " best raised cruel work.....1 00
" " 2d best raised cruel work.....hon'r
" " best pin cushion.....1 00
" " 2d best do.....hon'r
" " best specimen of wax work in fruit or flowers.....1 00
" the 2d best specimen of wax work in fruit or flowers, hon'r
" the best specimen of shell work, 1 00
" " 2d best specimen shell work, hon'r
" " best fly brush, 1 00
" " 2d best fly brush, hon'r
" " best and greatest variety of fancy work exhibited by one person—gold thimble.

FRUITS.

For the best and largest variety of apples, 1 00
" " " half-dozen specimens, 1 00
" " " and largest variety of pears, 1 00
" " " half-dozen specimens of do., 1 00
" " " and largest variety of peaches, 1 00

" " " half-dozen specimens of do.,	1 00
" " " and largest variety of grapes,	1 00
" " " dish of do.,	1 00
" " " and largest variety of fruits,	1 00
" " 2d best and largest variety of do.,	2 00
" " best and largest variety of dried fruits,	2 00
" " 2d best and largest variety of dried fruits,	1 00

FLOWERS.

For the best and largest variety of flowers,	1 00
" " 2d best and largest variety of flowers,	hon'r
" " most beautiful boquet,	1 00
" " 2d most beautiful boquet,	hon'r
" " most beautiful floral design,	2 00
" " 2d most beautiful florul design,	1 00

VEGETABLES.

For the best bushel of Irish potatoes,	1 00
" " " specimen of cabbage, beets, carrots and parsnips, each,	1 00
" the best and greatest variety of vegetables,	2 00
" " 2d best and greatest variety of vegetables,	1 00

FINE ARTS.

For the best painting in oil,	2 00
" " " specimens of daugerrotype,	2 00
" " " animal painting,	2 00
" " " best painting of fruit or flower,	2 00

MECHANICAL DEPARTMENT.

For the best carriage made in Alabama,	3 00
" " " buggy made in Alabama,	3 00
" " " wagon made in Alabama,	2 00
" " " ox cart made in Alabama,	1 00
" " " wheel barrow made in Alabama,	1 00
" " " carriage harness made in Alabama,	1 00
" " " buggy harness made in Alabama,	1 00
" " " wagon harness made in Alabama,	1 00
" " " plow stock made in Alabama,	2 00
" " " plow stock made in Alabama by slave,	2 00

ESSAY.

For the best essay on the management of plantation,	5 00
" the best essay on renovating and improving lands,	5 00

REGULATIONS OL THE FAIR.

Persons paying three dollars as an annual tax, and registering, or causing to be registered, their names, shall become members of this Society for one year, and be furnished with a badge that will admit them at all times during the Fair, to the buildings and grounds of the Society.

All Editors in the State will be furnsahed with a badge and admitted to the privilege of membership—and their families will also be admitted free to the Fair.

No person not a member of this Society can become a competitor for a premium, except in the ladies' department of the exhibition.

The public will be admitted by ticket at fifty cents each on Wednesday, the 12th day of October, 1853—said tickets to be delivered to the gate-keeper on entering.

RULES FOR EXHIBITION.

All who intend to compete for the premiums of the Society, must have their articles entered at the Secretary's office by Tuesday evening, the 11th of October.

All articles and animals entered for exhibition must have cards attached, with the number as entered at the Secretary's office.

INSTRUCTIONS TO THE JUDGES.

The Judges on animals will have regard to symmetry, early maturity and thorough breeding. They will make proper allowances for the age, feeding, and condition of the animals. They are required not to give encouragement to over fed animals.

The animals and other articles for which premiums shall be awarded, must be designated by some badge of distinction.

No person whatever will be allowed to interfere with the Judges during their adjudication.

All animals, such as horses, cattle, &c., must be either raised or owned in the State of Alabama.

The Judges will be expected, in all cases, to withhold premiums when the article or animal is not worthy, though there be no competition.

No person shall act as Judge when directly or indirectly interested in the result of their adjudication.

A. J. NOBLE, Secretary.

Yellow Clover,

FOR WINTER PASTURAGE.

THE subscriber having grown the Yellow Clover successfully upon his Farm, knows it to be the article represented above, which is just the thing Planters in the South need. The reduced rates at which the Seed are sold, is a sufficient guarantee that no humbug is intended.

These Seed are to be had at the Drug Store of B. R. JONES & CO. The clean Seed are sold at $1 per pint, enough for one acre. In the bur 50c. per peck.

Sept. 1, 1853-tf B. J. SMITH.

Saxon Merino Bucks.



THE subscriber has eight young Buck Lambs, of the above named fine breed of Sheep, and four of the same breed with a dash of the South Down. These Lambs are now four months old, of fine size, good condition and health. Gentlemen wishing to cross this fine variety of Sheep on their flocks, can have these at a small consideration above their market value for mutton. Price $10 each, deliverable at any time after the first day of September. If to be shipped, they will be delivered at Shorter's Depot, on the Montgomery and West Point Rail Road, in a good secure cage for which $1 will be required.

N. B. CLOUD.

July 1st, 1853.

SADDLERY.

F. A. ROBBINS & CO.,

CORNER WATER AND ST. MICHAEL STREETS,

MOBILE, ALA.,

DEALERS IN

SADDLERY,

INVITE the attention of *Merchants* and *Planters* to their extensive stock, comprising Saddles, Bridles and Martingales, Harness of every description, Leather of all kinds, Saddlery Hardware; Saddlers', Shoe-Makers' Carriage-Makers' Tools, Materials and Trimmings. Also, a superior article of Patent Stretched and Riveted *LEATHER BANDS*, for Cotton Gins, Mills, and Machinery, of all kinds that require Belts. All of which they offer for sale at *Low Prices*, wholesale and retail.

Mobile, July 1st, 1853-6t

Contents of this Number.

Premium List S. C. A. Society 257
American Press—Geological Cabinet 264
An Essay read before L. & S. Society, Selma 268
Cotton Picker 271
Turkeys 271
Why not grow more wool 272
EDITORIAL NOTICES 272
No. 1 Phosphate Lime 276
Yellow Clover 276
Agricultural Association 274
Work for the Month 275
Circular Ex. Council Agricultural Association 275
Plantation Economy—No. 10 276
Culture of Lucerne 277
Yellow Clover—History, Management, &c 277
HORTICULTURE—
Garden and Orchard—Hints for September 280
Profits of Fruit Culture 280
Treatment of Apple Trees and Cucumbers 281
Solanum Tuberosum 282
MISCELLANEOUS—
Selecting Soils for Analysis 282
That Paradox 288
Reply to Mr. Price's article—"The moral benefits of Slavery" 288
The Iron Trade of the United States 285
Premium List of the Agricultural Society 286

Mississippi Nurseries,

LOCATED NEAR YAZOO CITY, MISS.

THE subscribers take great pleasure in announcing to their friends, and the public generally, that they have now on hand, and ready for sale, one of the choicest collections of **Fruit Trees** to be found any where in the South. Their assortment is very large and complete—the trees are healthy and well grown—and the prices as low as can possibly be afforded. The following are some of the leading articles with prices annexed:

Pears $1 each,....$80 per 100.	Apricots $1 each.
Apples 25c. each, $20 " "	Nectarines 50c. "
Peaches 25c. " $20 " "	Plums $1 "
Strawberries, 50c. per doz.	Cherries $1 "

All articles sent from the Nurseries are carefully labelled, securely packed, and delivered in Yazoo City free of charge. Orders to receive attention, must be accompanied by cash, or good N. Orleans, Vicksburg or Yazoo City reference, and addressed to the subscribers at Yazoo City, Miss.

N. B. Persons unacquainted with the different varieties of Fruits, would do well to state for what purpose the trees are wanted, and leave the selection to the proprietors.

Sept. 1, 1858-6m C. B. SWASEY & CO.

THE SOUTHERN LADIES' BOOK, published in New Orleans, devoted to polite literature, and edited by Mrs. L. VIRGINIA FRENCH, at $3 per annum, invariably in advance. Emphatically the Book for Southern Ladies.

ALABAMA JOURNAL JOB OFFICE, PRINT.

NO. 1 SUPER-PHOSPHATE OF LIME.

THIS valuable fertilizer has been used for several years in England and other parts of Europe, and next to Guano, holds the highest rank in popularity, and the extent to which it is used among farmers. Its introduction in this country has been more recent; but the progress it has made in the estimation of the public has not been less marked or successful than abroad. It is now entensively used throughout the Northern States, after a full trial and investigation of its merits; and it is rapidly becoming, like its predecessor, Guano, a favorite manure at the South and West.

It is composed of crushed or ground bones, decomposed by the addition of about 1-5 their weight of sulphuric acid, diluted with water, to which is added a due proportion of guano and sulphate of ammonia. The latter is the active and one of the most efficient agents in the best Peruvian Guano.

It is suited to any soil in which there is not already a full supply of the phosphates, which is seldom the case. All crops are benefitted by its application.

For sale in large or small quantities, in bags of 150 lbs. each. No charge for packages. All bags will be branded "C. B. DeBurg, No. 1 Super-Phosphate of Lime."

For sale at R. L. ALLEN'S Agricultural Warehouse and Seed Store, 189 and 191 Water-street, New-York.

Sept. 1, 1858-2t

For Sale,

A good Cotton Plantation.

THE subscriber offers for sale his valuable Cotton Plantation, lying on the waters of Line Creek, in Macon County, Ala., and containing **960 Acres.**—There are 600 acres cleared on the tract and in successful cultivation. All the open land is protected by *grade ditching*, and the rows *horizontalized*. The place is well watered and healthful: two good springs in the Plantation, and a never-failing well of water in the yard. Improvements, such as Dwelling House, Negro Cabins, Stables, with Gin House and Screw, &c., in good order.—A further description is deemed unnecessary, as any gentleman wishing to purchase such a place, will prefer examining for himself.

Terms will be made to suit the purchaser. Stock and provisions will be sold with the place, at reasonable rates.

August 1, 1858-3t T. P. G. BRUMBY.

J. A. & S. S. VIRGIN,

MACON, GA., AND MONTGOMERY, ALA.,

DEALERS IN

PIANOS, HARPS, GUITARS, STRINGS,

Sheet Music,

AND A

VARIETY OF MUSICAL MERCHANDISE,

GOLD AND SILVER WATCHES,

JEWELRY, SILVER AND PLATED WARE, AND FANCY ARTICLES.

N B.—Watches, Clocks, and Jewelry repaired in the best manner.

April 1, 1858-6t

THE SOUTHERN CULTIVATOR, is published on the first of each month, at Augusta, Geo. D. LEE, M. D., Editor, and D. REDMOND, Assistant Editor. *Terms:* $1 a year, in advance.



A Monthly Journal, devoted to improved Plantation Economy, Manufactures, and Mechanic Arts

Vol. I. MONTGOMERY, OCTOBER, 1853. No. 10.

From DeBow's Review.

The Cotton Plant.

SOILS.—Of these there were three varieties, marked A, B and C, each variety being illustrated by two samples, one supposed to have been taken from the surface, and the other from a depth of ten or twelve inches.

Soils A and B are supposed to illustrate the average cotton soils of the Sea Island plantations, of which it may in general be remarked, that they are of the very highest description. The basis, and, indeed, almost the sole mineral constituent, is a fine, siliceous sand, precisely identical with that which forms the sand beaches of our sea coasts. They are enabled to support vegetation by the presence of a trifling proportion of aluminous earth, of oxide of iron, and vegetable matter, to which are added small quantities of the carbonates of lime and magnesia, and traces of phosphates and sulphates of the same basis, and of alkaline carbonates; all of which, taken together, fall considerably below ten per cent. The alumina, the oxide of iron, and the organic matter, perform an important service in the soil by rendering it binding, and retentive of the moisture and gaseous matter which are essential to the nutrition of plants; while the salts enumerated, either wholly or in prrt, enter also into the general circulation of the vegetable growth, and are more or less there detained, as indispensable constituents of the same. But it is also clear that a soil thus constituted would be unfit for supporting vegetation, except for the fact that it is situated directly contiguous to the sea, and in a temperature nearly tropical, thus giving rise to an atmosphere perpetually loaded with moisture.

Compared with inland and river-alluvion soils, the character of the Sea Island soil is very remarkable. The former rarely have more than 65 per cent. of silica, while their alumina and oxide of iron together, often mount up to 10 or 12 per cent., and the proportion of organic matter and hygrometric moisture to 12 or 15 per cent.

This contrast will indicate the direction in which the efforts of the planter should be made for the improvement of the Sea Island soils. Every addition he can afford to make of alumina, oxide of iron, and organic matter, will raise the character of his soils. The following researches will also afford hints respecting other ameliorations of his processes which lie within his reach.

It will be borne in mind that the analyses commence with the soil, after the withdrawal of the feeble trace of soluble matter which it contains, and after it has been rendered perfectly dry in the heat of the sun. The soluble matter consists of the chlorides of potassium, sodium and calcium, and of the sulphates and carbonates of potash and the sulphate of lime—in all, probably not equaling one part in a thousand of the soil.

There was but a slight difference between the two varieties of soil A. One exhibited a light cinnamon-gray color, the other was cinnamon-brown. The other had a little more organic matter, and had more of its oxide of iron in the condition of a carbonate than the former. On heating either of these soils to redness in a porcelain capsule, it quickly turns black for a moment, emits a slight odor, resembling that from burning peat, but unattended by smoke. This black color, which proceeds from the charring of the organic matter, soon disappears, and the soil assumes a yellowish brown color. In this process we only obtain faint traces of ammonia, compared with what is exhibited by rich inland soils. One hundred grains of the sundried soil, gave A

Silica, (in the form of fine sand)	92.85
Water, (hygrometrick moisture)	2.50
Organic matter, (mostly vegetable)	2.75
Alumina and peroxide of iron. the latter containing traces of phosphoric acid	1.40
Carbonate of lime and magnesia	0.50
	100.00

SOIL B.

Silica	91.78
Water	2.50
Organic matter	2.75
Alumina and peroxide of iron, with traces of phosphoric acid	2.30
Carbonate of lime and magnesia	0.72
	100.00

SOIL C.—This soil differs strikingly from the foregoing, containing, as it does, an excess of organic matter, and, in consequence, possessing a much higher retentive power for moisture. It is noticeable, also, that the silica, or sand grains, are more easily cleared of the adhering oxide of iron by the action of acids. Indeed, they can be washed clean with warm water only, while the same effect is, with difficulty, produced with acids even; an actual adhesion seeming to exist between the impalpable oxide of iron and alumina, and the sand grains, thus admirably adapting such soils to the purposes or vegetation the more they are worked, and the more they are enriched, which, it will be seen, abounds with oxide of iron.

Silica	87.53
Water	8.50
Organic matter	7.50
Peroxide of iron, (which in the soil must have existed as carbonate of iron,)	0.60
Alumina	0.12
Carbonate of lime	0.30
Carbonate of magnesia	0.45
	100.00

I should suppose that this soil is not at present adapted to the cotton plant. The organic matter is in excess, and in quality it is too nearly allied to that found in peaty land. Thorough drainage, successful cropping with corn, with the addition of the marsh-mud and artificial manures, might prepare it for cotton. This opinion, however, is advanced with reserve, being wholly suggested by chemical theory, and m y, therefore, require considerable modification in practice.

I notice that the carbonate of magnesia is more abundant in this soil than in A. and B. This suggests the idea that magnesia may be an important ingredient in the cotton plant, even when compared with its sister element lime; for soils which have been under long cultivation in cotton, although they still contain magnesia, nevertheless contain less of it than this newer and more unexhausted soil presents. It occurs to me, also, that one peculiarity of the Sea Island Cotten may be owing to the larger proportion of magnesia in sea-shore soils, this element being ever plentifully derived from the waters of the ocean, in which, in one form or another, it is ever found dissolved.

MARSH-MUD AND MARSH-TURF.—The specimens analyzed were first thoroughly sun-dried. No sensible difference subsisted between them, except in the proportions of organic matter, and adhering or hygrometric moisture in the one hundred parts.

	Marsh-Mud.	Marsh-Turf.	
Water	19.56	25.50	
Organic matter, (mostly vegetable	3.50	10.00	
Silica, (very fine sand,)	67.50		
Carbonate of iron	4.75		
Alumina	1.50		
Carbonate of lime and magnesia	1.64		Soluble substances either in water, or in water containing carbonic acid.
Phosphate of lime and magnesia	traces		
Chloride of Sodium, (common salt)	0.45		
Chloride of potassium	0.01		
Chloride of magnesium	0.05		
Sulphate of lime and magnesia	0.05		
	99.01		
	0.99		
	100.00		

The marsh-mud, before drying, contained 70 per cent. of water. In the process of sun-drying, therefore, it loses half its weight of water.

The marsh-turf, before drying, was found to contain 58 per cent. of water. In the process of sun-drying, therefore, it loses 33 per cent., or one-third its weight of water.

This consideration suggests that under some circumstances a saving of labor might be made in the transportation of these articles in a dry state, which might be effected, perhaps, by throwing them up into heaps near the marshes where obtained, and there allowing them to weather and dry, under a roof of boards to exclude the rain. There can be no doubt, also, that if the marsh-mud and turf could be to a degree pulverized and composted with other materials, and in this condition uniformly spread over the cotton lands, a decided advantage would be gained in planting.

We are now prepared to comprehend the uses of marsh-mud and turf. In the first place, the carbonate of iron, when blended with the soil, (in considerable quantity,) slowly turns in peroxide of iron, with the extrication of nearly one-third its weight of carbonic acid, (which, it will be kept in mind, is the chief aliment of vegetation,) the peroxide of iron acting together with the alumina as a cement or binder to the loose grains of sand, and as an attracter of moisture and a retainer of nutritious gases. In the next place, the soluble substances present in the marsh manures, are all of essential consequence to vegetable life; not to omit the organic matter, which is very considera-

ble, and in the case of the marsh-turf is very abundant, thus giving, as might be supposed, a preference to this over the marsh-mud, unless the difficulty of reducing it to a powder, and of incorporating it with the soil, presents an obstacle which overbalances the advantages arising from this superabundance of organic matter. Finally, it may be added, that the silica or sand in the marsh manures is in a more comminuted condition than that in the soil, and, therefore, serves an important purpose in rendering the land to which it is added closer and more retentive of moisture.

The question may now arise, can tha planter with advantage substitute any artificial manure or mixture for that of the marsh soils? The quantity of saline matter in it is certainly small, only about six pounds of common salt to the ton, about one pound chloride magnesium, and one of the sulphates of lime and magnesia; of insoluble constituents, twenty-three of carbonates of lime and magnesia to the same weight, and not far from 250 lbs. of good white clay. Of these ingredients all but the clay could be cheaply obtained; nor would this be very expensive, as it exists in great quantity near Augusta, contiguous to the Savannah river; but I apprehend the great difficulty would still remain, and which would be nearly fatal to the use of the mixture. This would consist in its uniform application to the soil. In some cases it would be in excess, and in others in a corresponding deficiency; whereas, applied as at present, in a copious vehicle of fine sand, its good effects are everywhere visible. It may be concluded, that the Sea Island planter is in no danger of using the marsh manures to excess, nor have we any intelligent grounds for thinking that any substitute will ever be discovered which shall render their employment superfluous.

ANALYSIS OF THE COTTON PLANT.—Two varieties of the plant were submitted for analysis, but no perceptible difference could be detected in their chemical composition.

A perfectly sun-dried plant, in which all the parts were present, excepting only the cotton-wood and seeds, was made the subject of analysis. Parts in due proportion from the root, the stem, the leaves, and the pool, were selected for incineration.

In drying, at a temperature of 33°, these parts of the cotton plant lost 15 per cent. of water, and gave a white ashes which weighed 2.75 to the 100 grains of the dried plant. But of this 2.75 grains, 0.30 was separated in the condition of fine sand, which must have been adhering mechanically to the plants, thus leaving 2.45 per cent. of ashes of this; 1.0, (or about two-fifths) was soluble in water.

The result of the analysis when the carbonic acid was deducted, which it is plain did not exist in the living or the dead plant previously to its combustion, may be stated as follows, leaving out also the water of absorption, and presenting the acids and basis in their uncombined state:

Lime and magnesia, (mostly the former)	44.50
Potash and soda, (mostly the former)...	27 50
Phosphoric acid	16.50
Sulphuric acid	6.50
Silica	1.80
Chlorine	1.50
Potassium and sodium	2.00
Oxide of iron in traces	99.90

COTTON FABRIC.—Two varieties were analyzed, but without any chemical difference between them. Water, (or hygrometric moisture,) 7.5 per cent. White ash, 1.2 per cent. One third of this was soluble in water; but of the insoluble portion, from 12 to 15 per cent. was fine sand, which was obviously a mechanical impurity, thus leaving 40 parts soluble, to 60 insoluble in the ash. Deduction being made for the adhering sand, therefore, we may set it down as a very close approximation, that every 100 lbs. of cotton contains one pound of the following substances, each in the proportions of the figures here set down against their names respectively:

Lime and magnesia, (mostly the former)	30.66
Potash and soda, (mostly the former,)...	28.50
Phosphoric acid.	18.80
Sulphuric acid.	5.80
Silica	2.00
Chlorine	1.75
Potassium and sodium	2.00
Oxide of iron in traces	98.51

COTTON SEED.—Two varieties were examined, but without essential differences. By drying, 100 grains lost 5.3 per cent. moisture, and the thoroughly charred residuum (the heating being effected in a nearly tight crucible, after the flame from the burning of the oil went out,) weighed 23 grains. This coaly residuum, when burned into a white ash, weighed 4.4 grains in one variety, and 4.3 in the other. In the former, 3.4 grains were insoluble, and in the latter, 3.4 grains were insoluble. The ash in both cases gave—

Lime and magnesia, (mostly lime)	25.50
Potash and soda, (mostly lime,)	17.50
Phosphoric acid	47.75
Silica	traces
Sulphuric acid	4.75
Chlorine	1.25
Potassium and sodium	1.75
	99.50

I satisfied myself that the cotton seed contained no sensible quantity of nitrogen—a point of some importance, as it had been suspected that its use as a fertilizer was analagous to that of some of the oleaginous seeds. The cotton seed, therefore, unlike to rape and flax-seed, is extremely deficient in albumen. As a manure, it is obvious that its use

consists in its richness in the phosphates of lime and magnesia, and of potash and soda.

The following is a comparative table of the results obtained in these analyses of the cotton plant:

	Plant.	Fibre.	Seed.
Lime and magnesia..	44.50	39.66	25.50
Potash and soda.....	27.50	28.50	17.50
Phosphoric acid.....	16.40	18.80	47.75
Sulphuric acid.....	6.50	5.80	4 75
Silica	1.80	2.00	traces
Chlorine	1.50	1.75	1.25
Potassium and sod'm	1.70	2.00	1.75
	99.90	98.51	99.50

We are fully authorized in regarding each of these ingredients, (however small their proportion,) as essential to the cotton plant. Some of them are abundant in the soil, and scarcely require to have the supply increasad; such, for example, are silica, lime, magnesia, and chlorine; while, on the other hand, there is a deficiency of phosphoric acid and potash, possibly also of sulphuric acid. These deficient elements, moreover, are in the rapid course of exhaustion, especially where the cotton seed is not returned to the soil, but employed on other lands devoted to the food-crops.

I should, therefore, strongly recommend to the cotton planter the following artificial manures:

First of all, the super-phosphate of lime mixture of Professor Mapes. It is composed of 100 lbs. bone dust, 56 lbs. sulphuric acid, 36 lbs. Peruvian bark, 20 lbs. sulphate ammonia.

Secondly, wood ashes; and the more these are mixed with charcoal (if in a somewhat pulverized condition, in which state it is a valuable condenser of moisture and nutritive gases) the better.

Thirdly, compost, formed, as far as possible, of the following materials: stable manure, forest leaves, straw, (small quantities, perhaps, of rice-chaff,) saw-dust, sweepings of houses and cabins, rubbish of old clay and plaster walls, lime, refuse of gas works from Charleston, soot, drainings from stables and gutters, soapsuds, and refuse saline liquids of all kinds.

It does not appear to me that the cotton lands require either quick-lime, common salt, or gypsum. They certainly will not need the last mentioned fertilizer, if the improved mixture of Professor Mapes is employed.

The more perfectly the compost is worked up together, and reduced by decomposition to the character of a powder, the better will be the effects it is capable of producing. If it could be treasured up for years, partly under the protection of a roof, and guarded from the action of the sun, its value would still be more highly enhanced.

C. U. S.

CHARLESTON, April 8th, 1853.

From the Working Farmer.

The Turnip Plant.

BY CUTHBERT W. JOHNSON, ESQ., F. R. S.

Within the last few years the increased use of root crops has been very great, and among these the Swedish Ruta Baga Turnip has held an important place.

Since the introduction of the Improved Superphosphate of Lime, many of our readers have raised crops equal to the best on record among English farmers, and they will perceive, by perusing the following article, that the composition of this material is peculiarly adapted to the raising of the crop, for the very constituents named as those of greatest necessity in the turnip, are here found in large proportions.

The Ruta Baga Turnip was first introduced into this country by William Cobbett, and although he was unable at that time to convince our stock breeders of the necessity of growing this crop, his arguments in its favor have never been forgotten —and backed up by more recent English practice, it now forms an important feature in our agriculture.

With a sufficient amount of manure, twelve to fourteen hundred bushels of Swedes Turnips may be raised on a single acre—and even this amount has been surpassed.

A careful reading of the following will repay for its perusal—[Ed.

I can, perhaps, hardly address myself on this occasion to any theme of more immediate interest to my readers, than to the growth of the turnip plant. When these observations, indeed, are read by the English farmer, the commencement of swede sowing will be close at hand. To promote the growth of these, to lay the foundation of more luxuriant and heavier crops, is surely then a question of peculiar interest to the agriculturalist at the present season of the year.

It is with the same object, that of gathering practical knowledge as to the profitable growth of turnips, that the Lockerbie Farmers' Club have now, for the last few years, systematically pursued their valuable labors in the district of Annandale.

The report of their experience in the unfavorable turnip season of 1852 will be found in the present volume of the Transactions of the Highland Society, p. 545; and that practical detail will well repay the young English farmer for a careful and repeated study, although, as the Club truly remark in their report, the results of their inquiries will be of more interest to the farmers of the district, acquainted with the localities and soils of each farm, than it can be to strangers. For the information of those unconnected with Annandale, it may be proper to mention that the district in which these trials and weighing were made, extends about twenty-five miles in length

along the valley of the Annan, in elevations from 100 to 800 feet above sea level, the farms inspected being mostly between 200 and 400 feet, though this year several of the best crops are from 600 to 700 feet above the level of the sea.

The examinations were made on about thirty-two farms, and the average weight in tons and cwts. per imperial acre for the four last crops were as follows:

	1849.	1850.	1851.	1852.
Swedes	21.16	24.9	19.16	23.7
Yellow	20.2	19.4	17	17.7
Common	22.7	25.14	21.1	23.14

The time of Sowing.—On the whole, these able Scotch farmers are still disposed to adhere to the opinions which they have formerly expressed, "that swedes should be sown from the 10th to the 20th of May, and that later than the 25th risked the weight of the crops; that white for consumption in September should be sown early in May, and again partially as the last sown of the season; that yellow should be after swedes, and as few as possible after the 15th of June," though certain members of the Lockerbie Club remark, "that on free and quick soils they would prefer a portion rather later, to insure nutritious food for sheep in Spring."

Width of drill, and hoeing out.—The width of the drill on the Annandaleshire farms is generally from 26 to 29 inches; but the opinion of many members seemed in favor of more discrimination. On level rich land, swedes well manured might be as wide as 30 or 31 inches; while on hard, gravelly soils, and on exposed and steep fields, yellow might be in some cases only 24 or 25 inches. As to width of hoeing, although in some instances from the peculiarly early falling down of the leaves, narrower thinning seemed advantageous, yet on the whole the Club adhere to their recommendation of 10 to 13 inches.

Manure of turnips.—It seems (adds the Lockerbie Farmers' Club in the valuable report from which I have already extracted so much,) more and more clearly ascertained, that to farm-yard manure alone, in quantities however great, extra manures should always be added, as increasing the weight at a cost far under the value of the extra produce; in fact, that no turnips should now be sown under land under ordinary rotation, without extra manure; and several members remarked, "that, with the addition of guano, the crop did often as well with dung little decomposed, as with that more thoroughly rotten." The club are also more impressed with the opinion that bones, either ground or dissolved, should, in most cases, especially with swedes, be used with guano and lighter manures.

The selection of the best and most useful manures for the turnip, and indeed for all crops, is a theme, of all others, most interesting to the farmer. It is here, too, that the chemist so clearly and so usefully lends his aid. As I have in the Farmers' Almanac for the present year, page 27, had occasion to remark—more than one distinguished chemist has, during the past year, materially added to our stock of knowledge in this way. Professor Voelcker has endeavored (Quarterly Journal, Ag., 1855, p. 225) to affix a money value to the constituents of artificial manures; this will not be without its value to the farmer, although, as Dr. Voelcker remarks, from all articles of commerce being subject to considerable fluctuations, it follows that the subjoined list can have no permanent value:

	d.
Every lb. of nitrogen in the form of ammonia, or nitric acid, may be estimated at	8
1 lb. of nitrogen, in the form of nitrogenized matter, at	6
Organic matter, free from nitrogen, eighteen lbs. at	1
Salts of potash, 1 lb. at	1
or potash separately 1 lb., at	1½
Salts of soda 9 lbs., at	1
Posphate of lime 1 lb.,	¾
or phosphoric acid separately 1 lb., at	1¼
Gypsum 6 lbs., at	1
Lime 12 lbs., at	1

For all practical purposes, the determination of the value of the remainder of the substances which are usually indicated in the analysis of artificial manures, such as oxide of iron, alumina, silica, &c., may be entirely neglected. To aid the young farmer to apply this, the following table gives the amount in lbs. of the nitrogen, phosphoric acid, and lime, in 1000 lbs. of bone-dust, fresh cow or horse dung, and dry straw:

	Bone Dust.	Dung.	Straw
Nitrogen	50	4	4
Phosphoric acid	240	3	2
Lime	330	4	4

Bone-dust thus contains about 12 times more forcing substances, and 80 to 100 times more grain-forming materials, than dry straw or the excrements of cattle. There is no doubt that bone-*dust* is the best application, where immediate benefit is chiefly regarded. In Saxony 1 cwt. of bone-dust is estimated to be equivalent to 25 or 30 cwt. of farm-yard manure; but even in this finely divided state, the full benefit which they are capable of affording is not realized in the first year. Experience has shown that the benefit of such bones in a soil which is neither too retentive nor too loose lasts for about four years, and amounts in the

First year	to	25 to 30 per cent.
Second	"	25 to 30 "
Third	"	20 to 25 "
Fourth	"	10 to 15 "

The slowness with which the entire bone dissolves is shown by the analysis of some Roman bones buried near to Cirencester, probably 1500 years since. In the following table, column I. gives substances found in 100 parts of II., the

lower jaw of an ox; III., the molar tooth of an ox; IV., the tusk of a boar; V., the thigh bone of a man—

I.	II.	III.	IV.	V.
Organic.....	11.77	8 41	18.12	8.62
Inorganic.....	88.23	91.59	81.88	86.38

Professor Anderson has been engaged in another important branch of the inquiry, viz: on the composition of the turnip grown on different soils, and with different manures. In the following table, column I. gives the soil and crop; II., the water in 10,000 parts; III., the nitrogen in the fibre; IV., the nitrogen in the juice; V., the phosphates. The turnips were grown on the property of Lord Kinnaird, in Perthshire. The clay soil is the heavy alluvial clay of the Carse of Gowrie, which is a wheat soil of the best description. The hill land is a light loamy soil, of an entirely different character from the Carse clay, and lets at a much inferior rent. The black land forms the boundary between the two former, and partakes of the character of both, those of the clay, however, preponderating—

I.	II.	III	IV.	V.
Swedes in 1849.				
Clay land.....	9058.0	2.9	12.9	16.0
Black land.....	9878.0	4.0	14.2	17.6
Hill land.....	8712.0	1.7	26.8	15.9
Swedes in 1850.				
Clay land.....	9273.0	3.7	8.6	9.6
Black land.....	9278.0	4.0	5.9	9.0
Hill land.....	9278.0	4 5	10.2	9.8
Aberdeen yellows, 1849.				
Clay land.....	9119.5	3.6	15.9	16.2
Black land.....	9047.8	3.8	13.7	16.7
Hill land.....	9057.8	3.9	24.4	13.3
Aberdeen yellows, 1850.				
Clay land.....	9426.3	3.1	7.8	6.8
Black land.....	9059.0	2.9	13.8	12.17
Hill land.....	9399.0	3.4	12.0	12.0

In the next table will be found the results of some very interesting experiments made with yellow turnips, at Lord Kinnaird's farm of Millhill. The different turnips were all manured with 16 tons of farm-yard manure, valued at four pounds, and had, in addition, quantities of different auxiliary manures. In this table, column I. gives the number of the experiments and the measure; II., the cost; III., the produce of turnips; IV., the gain in tons and cwts.

I.	II.	III.	IV.
0. 16 yards dung.....	£4 0s.	24 0	—
1. 4 cwt. White's manure.....	1 4	28 5	4 5
2. 2 cwt. guano, 2 cwt. salt.....	1 2	28 15	4 15
3. 3 cwt. guano.....	1 10	27 2	3 2
4. 3 cwt. Baillie's bone manure	1 4	25 18	1 18
5. 3 cwt. coprolite	1 4	25 0	1 10
6. 3 cwt. London Manure Co.'s manure	1 4	27 14	3 14
7. 4 super-phosphate.....	1 4	26 7	2 7
8. 3 cwt. guano, 1 cwt. super-phosphate, diluted with 200 gallons water.....	2 2	27 4	3 4
9. 3 cwt. super-phosphate diluted with 200 gallons water	1 18	27 15	3 15

In the following table, column I. gives the number (referring to the preceding table) of the experiments; II., the quantity of water found in 10,000 parts of the turnip; III., the ash; IV., the protein compounds; V., the fibre, sugar, &c.; and VI., the nitrogen found in these differently manured turnips. No analysis was made of Nos. 4 and 5, as the gain was not equal to the cost of the measures—

I.	II.	III.	IV.	V.	VI.
0.....	9827.0	89.6	83.8	549.6	14.2
1.....	9287.0	67.0	63.5	482.5	10.
2.....	9411.0	55.0	68.5	465.5	10.8
3.....	9345.0	58.0	82.5	514.5	13.1
6.....	9285.0	76.0	95.8	543.0	15.5
7.....	9243.0	59.0	73.0	625.0	11.
8.....	8862.0	75.0	117.4	945.0	18.5
9.....	9509.0	56.2	41.3	399.5	16.5

As Professor Anderson remarks, these prove an interesting series of experiments with different varieties of manures. Nos. 4, 5, 8, and 9, do not pay the cost of application. Some of these, however, yield a considerable profit, and that coupled, as in some cases, as in No. 6, with an improvement in the quality of the turnip, as indicated by the increased proportion of nitrogen, and diminished quantity of water. (Ibid 225.)

It is hardly possible to overrate the importance of such researches as these. Long—long, I repeat, may practice and science thus go hand in hand around the English farmer's fields; the good result of their union, let him be well assured, will not terminate in his time, or in that of his children's children. Fresh modes of cultivation, fresh fertilizers, will yet reward future inquirers after truth, and as the boundaries of knowledge increase, so let the agriculturalist be firmly assured, will be the produce of his fields.

SCIENCE AND AGRICULTURE.—Look at that wide valley, with its snow-clad summit at a distance on either hand, and its glassy river flowing cribbed and confined in the lowest bottom. Smiling fields and well trimmed hedge rows and sheltering plantation and a busy population, and abundant cattle cover its undulating slopes. For miles, industrious plenty spreads over a country which the river formerly usurped and the lake covered, and the rush tufted over, and bog and mossy heath and perrennial fogs and drizzling rains rendered inhospitable and chill. But mechanics have chained the river and drained the lakes and bogs and clayey bottoms, and thus giving scope to the application of all the varied practical rules to which science has led, the natural climate has been subdued, disease extirpated, and rich and fertile and happy homes scattered over the ancient waste.

Turn to another country, and a river flows deeply through an arid and desolate plain. Mechanics lift its waters from their depths, and a

thousand artificial channels direct them over the surface. It is as if an enchanter's wand had been stretched over it—the green herbage and waving corn, accompanied by all the industries of rural life, spring up as they advance. Another country, and a green oasis presents itself, busy with life, in the midst of a desert sandy plain. No natural springs here gush up, as in the ancient oasis of the Lybian wilderness. It is another of the triumphs of human industry, guided by human thought. Geology and her sister sciences are here the pioneers of rural life and fixed habitation. The seat of hidden waters at vast depths was discovered by her. Under her directions, mechanics have bored to their sources, and their gushing abundance now spreads fertility around. Such are the more sensible and larger triumphs of progressing rural economy—such as man can well boast of—not only in themselves, but in their consequences; and they may take their place with the gigantic vessel of war, as magnificent results of intellectual effort.

From the Boston Cultivator.

Action of Guano.

The following interesting and valuable article has been received in reply to a request for information respecting the action of guano. In respect to the effect of mixing this substance with plaster, it will be seen that the writer coincides with the conclusion expressed by T. S. Pleasants, Esq., in a late number of this paper.—[Eds.

I may remark in the first place that I am aware that a difference is apparent in the action of guano upon different soils, or in different sections of country, dependent, perhaps, often upon a difference in the soils themselves; but from facts that have come under my own observation, I am entirely convinced that this is not always the cause. For example, I have myself, for the purpose of experimenting, sowed guano broadcast in the Spring of the year, upon clover, and left it exposed upon the surface, and although it was raining at the time, I have seen no effect from it. I have also applied it on wheat by harrowing it in with the wheat after both were spread broadcast upon the surface, and observed a beneficial result to the wheat crop, but very far less than when it has been ploughed in previous to sowing the wheat. In the former case, but little, if any advantage was derived from the guano, to succeeding crops; whereas, during the whole of my experience, a marked and important improvement in the land has resulted.

Thus upon the same kind of land we find very different results dependent upon the mode of application. I have, however, heard of instances where it has been harrowed in with the wheat, and a better effect realized than I have observed myself. May not this have depended upon other causes than the mode of application? For instance, continued and plentiful rains may have fallen soon after, sufficient to have carried the ammonia, &c., into and incorporate it more effectually with the soil, than at other times. Also, the state of the weather after the rains may have been such (possibly unobserved by the farmer at the time, as connected with his operations,) as to secure the most favorable action under the circumstances.

In order to show how these different results are sometimes manifested, I will further state that some fourteen or fifteen years ago, I limed a portion of one of my fields carefully, at the different rates of fifty, seventy-five and one hundred bushels to the acre. In the autumn of 1845, I sowed this field in wheat, giving it a dressing of two hundred and seventy pounds of guano to the acre. The average yield was within a fraction of twenty bushels per acre. Early in the Spring, the wheat on the limed portion of the land was of a darker green than the other; but at harvest it was evident that the wheat was, by several bushels better per acre where there had been no lime. In 1849, this same field was sown in wheat, and received two hundred pounds guano per acre. In 1850, it was again sown in wheat, and perhaps a little more than two hundred pounds guano applied per acre. Each time ploughed in before the wheat was sowed. Both these last crops exceeded that sown in 1845, but the difference between the wheat on the limed portion of the field and the other was still greater than in the first instance; that where no lime had been used being much the best. While these crops were being grown, a friend of mine, within six miles of me, purchased an old worn-out field for ten dollars per acre, ploughed it in the fall, and spread thirty bushels of lime per acre after the ploughing. In the following Spring he sowed (I think) between two hundred and three hundred pounds guano per acre, and ploughed both in together, planted it in corn, and the measured product was forty-five bushels per acre, for which he was offered in cash more money than had been expended in the purchase of land, lime, and guano too. I am at a loss how to account for these different results in any other way than by supposing there must be some difference in the constitution of the soils, which neither he nor I have detected. Here, perhaps, a good practical chemist might be useful to us. The only distinction we are able to make is, that there is much isinglass [mica] in his soil, and none in mine. Both resting upon the same kind of yellow clay and rather loamy subsoils.

Secondly—So far as my knowledge and observation extend, guano acts more satisfactorily on land "containing a considerable proportion of clay, such as may be called a clayey loam" subsoil. And even upon our moist, stiff, white clay low grounds (sometimes found here) its effects are very striking.

Thirdly—"What have been the comparative results in the application of guano mixed with plaster, and that which was applied alone, or mixed with any other substance?" In answer to this interrogatory, I can state that the experiments reported through the columns of the American Farmer," by "Caleb Stabler," are fully to be relied on, so far as they pertain to his own practice and observation, and to which alone he intended them to apply. I know him well, and can vouch for his integrity as a man, and his skill and success as a farmer. His soil is much the same in appearance as that on which the lime and guano were combined in their application to the corn crop. On the other hand, I have three times used guano combined with a portion of plaster, in the proportions of a peck or half bushel of plaster to a bushel of guano, without being able to discover any difference in the effect. But in the Fall of 1849, I took up an old and exceedingly poor field, with a view to its improvement—ploughed it thoroughly and planted it in corn the following Spring, without a prospect of being remunerated by the crop for the expense of cultivation, and was not disappointed in my calculations. I, however, reserved nearly one acre for potatoes. This was treated to forty-four large ox-cart loads of manure from the stables and barn-yard, and constituted so heavy a dressing that in ploughing it in (in the Spring) several men with rakes were necessarily employed in raking the manure into the furrow before the plough, in order to secure its being covered. The ground was then harrowed, rolled and checquered into squares about two feet each way—a moderate handful of leached ashes dropped in each chequer, and a cutting of Irish potatoe placed on it and covered with the hoe. The roller was again passed over it, and one and a half bushels of plaster sown broadcast. The potatoes came up well, and were well cultivated, though the growth throughout a good season, as regards moisture and temperature, was very inferior. The crop when gathered, fell short of fifty bushels of indifferent potatoes.

After they were dug, the ground was put in wheat, two hundred pounds of guano being first ploughed in. On two sides of this potatoe lot, and adjoining it, at the same time, I sowed strips of wheat twenty-one feet wide, applying to this, at the rate of three hundred pounds of guano per acre, as nearly as I could estimate the quantity. The product was forty-one bushels and a few pounds of wheat, say rather less than an acre and a half.

But it was evident to all who saw it, that the best of the wheat grew on the strips added to the potatoe ground, and on which no manure of any kind had been used except the guano, and which was so very poor that it probably had not, the previous season, produced five bushels of corn per acre.

The balance of this field lay idle till Fall, when the whole was well prepared and sown with wheat, with, perhaps, a little over two hundred and fifty pounds of guano per acre. As the crop matured, to the surprise of all who viewed it, that portion of the field cultivated in potatoes, while the other was in corn, certainly did not produce half the amount of wheat grown upon the same quantity of land in any other portion of the field. In that crop, the failure was as signal as it had been with the potatoes. While engaged in sowing and ploughing in the guano, preparatory for this crop of wheat, I carefully mixed with the guano designed for a small strip across a portion of the field, at the rate of half a bushel of plaster to one bushel of the guano, and sowed them together. Early the following Spring, our "Agricultural Club" met at my house, and while progressing with the usual examination of my farming operations, their attention was directed to the previous treatment and condition of the different portions of this wheat field. The striking contrast before them (the strip on woich the guano was combined with plaster, being much inferior to that on either side of it,) became the subject of general remark, until at length one of our number observed that the different effects produced were probably owing to the combination of plaster with guano and other manure, having had the effect to "fix" the ammonia contained in both to such an extent as to place them out of the reach of the growing crops. I can account for this in no other way.

This field was laid down in clover, and about midsummer, during the past year, half a bushel of plaster per acre was sown, and now the clover is looking well all over it. Thou wilt, perhaps, query why, with the evidence before me, have I sown plaster on this (now) clover field? I will reply by stating that we frequently find here that land on which plaster appears to have little or no effect while it is very poor, is much benefitted by its application after it has undergone improvement; and I am also able to state that six years ago I gave a field two hundred pounds of guano per acre. The year following sowed it in oats, and received fair crops of both in return. After the oats came off, the field was broken up, harrowed and rolled, then two hundred pounds of guano, and three bushels of finely pulverized bone to the acre, ploughed in, the roller passed over it, and one and a half bushels Mediterranean wheat per acre, put in with a drill. In the following Spring, six quarts of clover seed per acre sowed. This field gave twenty-seven bushels and twelve pounds of wheat per acre; and the year following, so large a growth of clover that it fell all over the field. In the fall of that year, this twelve acre field yielded seventeen and a half bushels clover seed. The year following, (which was last year) early in the Spring it was dressed with three pecks of plaster per acre, and gave a good crop of

clover, though not so abundant as the first; and last fall, the same land yielded twenty-two and a half bushels of clover seed. I now expect to give it another dressing of plaster this Spring, and shall probably again cut both hay and seed from it the coming Summer. This field was poor previous to the applications of manure above mentioned. It is now completely renovated.

By the foregoing hasty sketch thou wilt perceive that I have arrived at the conclusion that on my land it is not best to apply guano where lime has been previously used, nor to mix plaster with guano or barn-yard or stable manure at the time of using them; but after the lapse of a year or two, or perhaps more, the plaster may be resorted to as an auxiliary with success. I may also add, that we have invariably found that guano acts well when combined with manure from the cow-yard and stables, as well as with ground bones.

THOS. P. STABLER.

BROOKVILLE, Montgomery Co., Md.

From the Horticulturalist.

The Beautiful in Ground.

We may have readers who think themselves not devoid of some taste for nature, but who have never thought of looking for beauty in the mere surface of the earth—whether in a natural landscape, or in ornamental grounds. Their idea of beauty is, for the most part, attached to the foliage and verdure, the streams of water, the high hills and the deep valleys, that make up the landscape. A meadow is to them but a meadow, and a ploughed field is but the same thing in a rough state. And yet there is a great and enduring interest, to a refined and artistic eye, in the mere surface of the ground. There is a sense of pleasure awakened by the pleasing lines into which yonder sloping bank of turf steals away from the eye, and a sense of ugliness and harshness, by the raw and broken outline of the abandoned quarry on the hill-side, which hardly any one can be so obtuse as not to see and feel. Yet the finer gradations are nearly overlooked, and the charm of beautiful surface in a lawn is seldom or ever considered, in selecting a new site, or improving an old one.

We believe artists and men of taste have agreed that all forms of acknowledged beauty are composed of curved lines; and we may add to this, that the more gentle and gradual the curves, or rather the further they are removed from those hard and forcible lines which denote violence, the more beautiful are they. The principle applies as well to the surface of the earth as to other objects. The most beautiful shape in ground is that where one undulation melts gradually and insensibly into another. Every one who has observed scenery where the foregrounds were remarkable for beauty, must have been struck by this prevalence of curved lines; and every landscape gardener well knows that no grassy surface is so captivating to the eye as one where these gentle swells and undulations rise and melt away gradually into one another. Some poet, happy in his fancy, has called such bits of grassy slopes and swells, "earth's smiles;" and when the effect of the beauty and form of outline is heightened by the pleasing gradation of light and shade, caused by the sun's light variously reflected by such undulations of lawn, the simile seems strikingly appropriate. With every change of position the outlines vary, and the lights and shades vary with them, so that the eye is doubly pleased by the beauty of form and chiaro-scuro, in a lawn with gracefully undulating surface.

A flat or level surface is considered beautiful by many persons, though it has no beauty in itself. It is, in fact, chiefly valued because it evinces art. Though there is no positive beauty in a straight or level line, it is often interesting as expressive of power, and we feel much awed by the boundless prairie, or desert, as by the lofty snow-capped hill. On a smaller scale, a level surface is sometimes agreeable in the midst of a rude and wild country by way of contrast, as a small, level garden in the Alps will sometimes attract one astonishingly, that would be passed by, unnoticed, in the midst of a flat and cultivated country.

Hence, as there are a thousand men who value power, where there is no one who can feel beauty, we see all ignorant persons who set about embellishing their pleasure-grounds, or even the site for a home, immediately commence levelling the surface. Once brought to this level, improvement can go no further, according to their views, since to subjugate or level, is the whole of man's ambition. Once levelled, you may give to grounds, or even to a whole landscape, according to their theory, as much beauty as you like. It is only a question of expense.

This is a fearful fallacy, however; fearful oftentimes to both the eye and the purse. If a dead level were the thing needful to constitute beauty of surface—then all Holland would be the Arcadia of all Landscape Painters, and while Claude, condemned to tame Italy, would have painted the interior of inns, and groups of boors drinking, (vide the Dutch School of Art,) Teniers, living in the dead level of his beautiful nature, would have bequeathed to the world pictures of his native land, full of the loveliness of meadows smooth as a carpet, or enlivened only by pollard willows and stagnant canals. It is not the less fearful to see, as we have often seen in this country, where new places are continually made, a finely varied outline of ground utterly spoiled by being graded for the mansion and its surrounding lawn at an expense which would have curved all the walks, and filled the grounds with the finest trees and shrubs, if their surface had been left nearly or quite as na-

ture formed it. Not much better, or even far worse, is the foolish fancy many persons have of terracing every piece of sloping ground—as a matter of ornament, where no terrace is needed. It may be pretty safely said, that a terrace is always ugly, unless it is on a large scale, and is treated with dignity, so as to become part of the building itself, or more properly be supposed to belong to it than to the grounds—like the fine, architectural terraces which surround the old English mansions. But little gardens thrown up into terraces, are devoid of all beauty whatever, though they may often be rendered more useful or available in this way.

The surface-of the ground is rarely ugly in a state of nature—because all nature leans to the beautiful, and the constant action of the elements goes continually to soften and wear away the harshness and violence of surface. What cannot be softened, is hidden and rounded by means of foliage, trees and shrubs, and creeping vines, and so the tendency to the curve is always greater and greater. But man often forms ugly surfaces of ground by breaking up all natural curves, without recognizing their expression, by distributing lumps of earth here and there, by grading levels in the midst of undulations, and raising mounds on perfectly smooth surface; in short, by regarding only the little he wishes to do in his folly, and not study the larger part that nature has already done in her wisdom. As a common, though accidental illustration of this, we may notice that the mere routine of tillage on a farm has a tendency to destroy natural beauty of surface, by ridging up the soil at the outside of the field, and thus breaking up that continuous flow of lime which delights the eye.

Our object in these remarks, is simply to ask our readers to think in the beginning, before they even commence any improvements on the surface of ground which they wish to embelish—to think in what natural beauty really consists, and whether in grading, they are not wasting money, and losing that which they are seeking. It will be better still, if they consider the matter seriously, when they are about buying a place, since we have said in our last number, no money is expended with so little show for it, and so little satisfaction as that spent in changing the original surface of the ground.

Practically—the rules we would deduce are the following: To select always, if possible, a surface varied by gentle curves and undulations. If something of this character already exists, it may often be greatly heightened or improved at little cost. Very often, too, a nearly level surface may, by a very trifling addition—only adding a few inches in certain points—be raised to a character of positive beauty—by simply following the hints given by nature.

Where a surface is quite level by nature, we must, usually, content ourselves with trusting to planting, and the arrangement of walks, buildings, &c., to produce beauty and variety; and we would always, in such cases, rather expend money in introducing beautiful vases, statues, or other works of positive artistic merit, than to terrace and unmake what nature has stamped on the ground.

Positively ugly and forbidding surfaces of ground may be rendered highly interesting and beautiful only by changing their character entirely by planting. Such ground, after this has been done, becomes only the skeleton of the fair outside of beauty and virtue that covers the forbidding original. Some of the most picturesque ravines and rocky hill-sides, if stripped entirely of their foliage, would appear as ugly as they were before beautiful, and while this may teach the improper that there is no situation that may not be rendered attractive, if the soil will yield a growth of trees, shrubs and vines, it does not the less render it worth our attention in choosing or improving a place, to examine carefully beforehand, in what really consists the beautiful in ground, and whether we shall lose or gain it in our proposed improvements.

Apple Tree Caterpillars.—During the months of July and August, there may be found on apple-trees and rose-bushes little slender caterpillars of a bright yellow color, sparklingly clothed with long and fine yellow hairs on the sides of the body, and having four short and thick brush-like yellowish tufts on the back, that is on the fourth and three following rings, two long black plumes or pencils extending forward from the first ring, and a single plume on the top of the eleventh ring. The head, and the two little retractile warts on the ninth and tenth rings are coral red; there is a narrow black or brownish stripe along the top of the back, and a wider dusky stripe on each side of the body. These pretty caterpillars do not ordinarily herd together, but sometimes our apple trees are much infested by them. When they have done eating, they spin their cocoons on the leaves, or on the branches of trunks of the trees, or on fences in the vicinity. The chaysalis is not only beset with little hairs or down, but has three oval clusters of branny scales on the back. In about eleven days after the change to the chrysalis is effected, the last transformation follows, and the insects come forth in the adult state, the females wingless, and the males with large ashen-gray wings, crossed by wavy darker bands on the upper pair, on which, moreover, is a small black spot near the tip, and a minute white crescent near the outer hind angle. The body of the male is small and slender, with a row of little tufts along the back, and the wings expanded one inch and three eighths. The females are of a lighter gray color than the males; their bodies are very thick, and

of an oblong, oval shape, and, though seemingly wingless, upon close examination two little scales, or stinted winglets, can be discovered on each shoulder. These females lay their eggs upon the top of their cocoons, and cover them with a large quantity of frothy matter, which on drying becomes white and brittle. Different broods of these insects appear at various times in the course of the summer, but the greater number come to maturity and lay their eggs in the latter part of August and the beginning of September; and these eggs are not hatched till the following Summer. The name of this moth is *Orgyia leucostigma*, the white marked Orgyia or tussock-moth. In Hovey's Gardner's Magazine, Mr. Ives states that on passing through an apple orchard in February, he "perceived nearly all the trees speckled with occasional dead leaves, adhering so firmly to the branches as to require considerable force to dislodge them. Each leaf covered a small patch of from one to two hundred eggs, united together, as well as to the leaf, by a gummy and silken fibre, peculiar to the moth." In March he "visited the same orchard, and as an experiment, cleared three trees, from which he took twenty-one bunches of ef eggs. The remainder of the trees he left untouched until the tenth of May, when he found the caterpillars were hatched from the eggs, and had commenced their slow but sure ravages. He watched them from time to time, until many branches had been spoiled of their leaves, and in the autumn were entirely destitute of fruit; while the three trees which had been stripped of the eggs, were flush with foliage, each limb, without exception, ripening its fruit." These pertinent remarks point out the nature and extent of the evil, and suggest the proper remedy to be used against ravages of these insects.

From the Scientific American.

Madder and Indigo.

I have noticed that you have endeavored to direct the attention of our cultivators to the raising of madder and indigo.

Madder, to afford a beautiful and permanent tint, must be raised in a soil containing a large portion of calcareous earth, the more the better. The Dutch madder does not afford so beautiful a color, nor is it as permanent as that raised at Avignon, in France. The soil on which the latter grows contains fifty-six per cent. of fine limestone, the former not more than ten per cent. Madder raised in the non-calcareous soil of Alsace, gives a color of no permanency or beauty; but when raised in a soil containing more than ninety per cent. of lime earth, the roots give faster and more beautiful dyes than that of Avignon.

The natural soils of Kentucky and Illinois would produce madder of very superior quality. About the year 1817, when in Kentucky, I used some madder raised in their gardens, and it proved to be of excellent quality. It requires three years to bring madder to perfection, and I am afraid this will prevent our cultivators from growing it, as few of them would be willing to wait that time for returns. They might, however, plant beds every years, and after the first three years have annual crops.

Madder is raised in narrow beds, about four feet wide, for the convenience of keeping it free of weeds—an operation necessary to the perfection of the roots. In Kentucky they let the shoots grow to about one foot high, when they lay them down and cover them with soil, and these form new roots. This may be repeated two or three times in their summer season. These laid down the first year make good roots for consumption when dug at the end of the third season. They have a good space between each bed to afford soil for covering the roots. At the final digging, roots of the size of a goose quill are laid by for grinding, and the smaller ones are transplanted.

To prepare madder for market, it is necessary to stove-dry the roots and grind them, and these operations require considerable outlay and experienced operators. In grinding, the outside cuticle is first taken off, and this forms what is known in the market as "mull madder," which is only used is dyeing blacks, bottle-greens, and dark browns. The next layer taken off is known as "garnene," and is used for a great variety of common colors. The third is known as "ombre," and the fourth as "crop," or "grappe." Either of the last may be used for red dyes; but the crop gives the most beautiful color.

Madder roots are imported from Smyrna to England, called Palestine madder, which are ground in London.

There are two colors extracted from madder when boiled, a red and a dingy yellow; but when the red alone is required the liquor must be kept below a boiling heat.

INDIGO.—Indigo is an annual crop; it is cut when at maturity, placed in a steeper, then covered with soft water, and stones placed on the plant to keep it under the water. It remains steeping until the liquor becomes of a greenish yellow, with a copper-colored scum round the outside. The liquor is then drawn into a receiver, and the workmen beat it with long poles to oxydize the green fæcula, which will then precipitate as blue indigo.

About the latter end of the year 1799, or the beginning of 1800, I owned a large dyeing establishment in the west of England, consuming about 400 pounds of indigo per week. At the date above mentioned I went to London to lay in a stock for the blue vats. Among the lots offered were two chests made in South Carolina, on the Pedee river, by the late General Wade Hampton.

On examining them I found it of a deep rich copper color, clean and smooth in the fracture, and as it was offered at one shilling per pound cheaper than Bengal of similar quality, I bought them with several of the latter, and as I expected, the quantity of coloring matter extracted from the South Carolina was greater, by at least ten per cent. than from the Bengal.

I emigrated to this country in the year 1808, and the following year I wrote to General Wade Hampton to know if he continued to make indigo, and to inform him of the superiority of the two chests I had used. In his answer he informed me that he had given up the making of indigo, because cotton planting paid better, and that indigo making so injured the health of his slaves that some of them never recovered their previous strength. The injury he complained of is produced during the beating process; for so rapid is the absorption of oxygen gas from the atmosphere, during the operation, that those who stand over it must be breathing an air with its vital principle so diminished as to render it unfit to sustain animal life. This difficulty might be easily obviated by letting the liquor from the steep run into a receiver, shorter and narrower than the lower one, with a cullender bottom made of zinc, and through it dripping into the lower one called the beater. It would require three or four feet between the two, I believe, by this process, the green faecula would be more completely oxydized, and a better quality of indigo produced than by beating.

Those who prefer the old process could restore the strength of their slaves by the following simple operation:—let them procure a twelve gallon graded gasonemeter, and convey into it for every three gallons of atmospheric air one gallon of oxygen gas; by increasing this increased vital fluid a few times, the whole of the carbon that had increased in the blood from breathing a non-vital gas, would pass off, and strength be restored.

WM. PARTRIDGE.

BIRMINGHAM, N. Y., 1853.

[We hope our agriculturalists and planters will give the above communication a faithful consideration. The Bengal indigo monopolizes our market as the first quality.—[ED.

From the Macon Telegraph.

Messrs. Editors: I have noticed two sad accounts this Summer of deaths in this State from the bite of snakes. Humanity requires it to be known that *Whiskey* is a certain remedy. One of my negro boys, a few days since, was badly bitten by a copper-head Mockeson. I immediately made him drunk with raw whiskey and soaked the wound with hartshorn. He has suffered no inconvenience except a bad sore upon his leg.

It ought to be generally known that no animal poison can stand whiskey in a fair fight.

S. T. BAILEY.

From the Farmer and Mechanic.

Vegetable Productions of Various Climes.

Every person who is at all inclined to watch the progress of nature, may have observed that vegetation takes place on almost every substande. Vegetation is found on the bark of trees, on brick walls, naked rocks, tiled roofs, and even in the very streets. The temperature of the atmosphere seems to form the only obstacle to the universal extension of vegetable nature. The scale of atmospherical heat serves accordingly as the ordinary scale, for the progress of vegetation. Man, availing himself of this circumstance, has transported and disseminated almost over the whole surface of the globe, those herbaceous plants which supply him with his principal nourishment. Some useful plants have been rendered common to every climate by nature herself. Still, although the empire of vegetation embraces the globe from pole to pole, and from the summit of the Andes, where the lichen creeps over the hardest rocks to the bosom of the ocean, from which floating fields of algæ and fuci rise unseen—amidst cold and heat, light and shade—still every place and every temperature has its peculiar vegetation, which thrives and prospers there. A writer in Europe, who has given the subject years of research, shows us that nature has spread a universal table for the use of man.

At the equator we find the natives of the Spice Islands, the clove and nutmeg trees, pepper and mace. Cinnamon bushes clothe the surface of Ceylon. The East Indies produce the odiferous sandal-wood, the ebony tree, the teak tree, and the banyan. In Arabia we find balm, frankincense, myrrh, the coffee-tree and the tamarind. In the thickets to the west of the Caspian Sea, we have the apricot, citron, peach and walnut. In the same latitude, in Spain, Sicily and Italy, we find the dwarf plum, the cypress, the chesnut, the cork tree, the orange and lemon trees perfume the air with their blossoms, and the myrtle and pomegranate grow wild among the rocks. Cross the Alps, and we find the vegetation which belongs to Northern Europe, of which England is an instance. The oak, beach and the elm are natives of Britain. As we travel still farther to the North, the forests again change their character. In the northern provinces of Russia the Scotch fir and the larch abound. In the Orkney Islands no tree is found but the hazel, which also occurs on the shores of the Baltic. The hoary or cold elder makes its appearance north of Stockholm, and the sycamore and mountain ash about the Gulf of Bothnia. Even within the arctic circle we find flowers of great beauty, such as the mezeron, the yellow and water lily, and the European globe flower. When these fail, the reindeer moss still makes the country habitable for animals and man. Wheat extends over certain tracts from New York to Thibet, but it does not flourish in

the polar regions, nor within the tropics, except in situations considerably raised above the level of the sea. The vine does not flourish under 50, nor much above 63 degrees, unless elevation of situation correct the excess of heat. Maize and olives have their favorite regions in France, Italy and Spain. Rice in the West Indies, Persia and Asia. Millet in Africa; cotton in America. The sugar cane, the indigo tree, the plantain and the mulberry, all natives of India and China, have all found a genial climate in the West Indies and America. The genuine tea-tree, as yet, has not flourished out of China. The Cassova yama, the bread-fruit tree, and the sago palm, are especially adapted for certain islands. It would seem that all this natural wealth adapted to certain climates, was originally designed to prompt commercial and friendly interchange between the inhabitants of countries most remote from each other; certainly it has been and is the great link which binds societies together.

Of all the communities or nations in the world, none are so universally favored in variety of soil, climate and natural productions as the United States. Oats, rye, barley, maize, wheat, rice, tobacco, sugar, vines, mulberry, hops and hemp are all cultivated to the greatest perfection in this country. Every other plant or vegetable that does grow either in Europe, Asia or Africa, can also grow in some part of our favored country. The timber trees of the States are of every variety, and of the best quality. There are 26 kinds of oak, 18 kinds of pine, cedar and larch, 7 kinds of maple, 10 kinds of walnut trees, 4 kinds of birch, besides many others of the most useful qualities. There are 130 kinds which rise to a height of more than 30 feet.

The future prospect of American fruits and flowers is undoubted. Nature and Providence intend this country not only to be the granary, but the flower garden of the world.

From the Southern Cultivator.

Basket Willow.

The cultivation of the Osier, or Basket Willow, might be made profitable on low grounds that are now lying waste in many sections of the country. This Willow is also valuable to plant on the banks of streams subject to heavy, washing freshets, as the roots spread through the soil and prevent it from yielding to the action of the water. A correspondent of Hunt's Merchant's Magazine gives the following account of the different varieties, their uses, commercial value, &c.

From the best information I can obtain, there are from four to five millions of dollars' worth of willow annually imported into this country from France and Germany. The prices range from $100 to $130 per ton weight—the quantity imported may appear large, and yet it is not sufficient for the consumption. In view of this importation, and the large sums expended for willow, would it not be well for some of your wealthy readers and landholders to give a little attention to the subject. Loudon, in his Aboretum, (volume 3,) gives an account and description of one hundred and eighty-three varieties of this plant. Knowing nothing of botany, I will confine myself exclusively to the three kinds best adapted for basket-making, farming, tanning and fencing.

The Solix Viminalis is that specimen of all others best calculated for basket makers. An acre of this properly planted and cultivated upon suitable soil, will yield at least two tons weight per year, costing about $15 per ton for cultivating and preparing for market.

This kind of willow, grown in this country and sent to market free from bruises, breaks, and mildew, will at all times command the highest price.

The importers (quite naturally) discountenance the idea of attempting the cultivation in this country, alleging as a reason that the flies will seriously damage the crop, and that labor is so high it will never pay. To this I have to say, that I have growing as good a quality of willow as is grown in any part of the world; that from two acres cut last year, the proceeds, clear of all expense, was the snug little sum of $333 75; and if any person requires stronger proof than this of the feasibility of growing willow profitably in this country, I can refer them to John Bevridge, Esq., of Newburgh, New York, and Dr. Charles W. Grant, M. D., of the same place, a practical botanist and thorough-going horticulturalist, who has given much time and attention to this subject, and has the best and greatest variety of willow, and the largest quantity planted of any one in the United States. All his stock is imported, and in fine condition for propagating.

The people of England, like us at present, until the year 1808, relied entirely for their supply upon continental Europe. The supply was cut off by the breaking out of the war between England and France, so that after that date they were compelled to rely upon their own crops, and many associations in England offered large premiums on the best production of willow.

The late Duke of Bedford, one of the best farmers and horticulturalists of that day, gave much attention to the subject, which is rigorously prosecuted by his son, the present Duke, and brother to Lord John Russell. His grace had one specimen which is extensively planted in and about the park at Woburn Abbey, Bedfordshire. In England this plant is highly prized for its beauty, rapidity of growth, outgrowing all other trees, and giving a fine shade in two or three years. This is the Salix Alba, or Bedford Willow. The bark is held in high estimation for tanning; the wood for shoemakers' lasts, boot-trees, cutting-boards, gun and pistol stocks, and house timber. The wood

being fine-grained, and susceptible of as fine a polish as rosewood or mahogany. An acre of this kind of wood, ten years' old, has sold in England for £155.

The next species is the Huntington Willow, or Salix Capua, which is also a good basket willow, and is used extensively in England for hoop poles and fencing by the farmers. Their manner of planting when for fencing, is by placing the ends of the cuttings in the ground, and then working them into a kind of trelis-work, and passing a willow withe around the tops or ends, so as to keep in shape for the first two years. They then cut the tops off yearly and sell them to the basket-makers; thus having a fence and crop from the same ground.

Another description of fence is also made from the salix capua, known in England by the name of hurdle fences, which may be removed at the pleasure or discretion of the proprietor.

The salix alba is extensively used by retired tradesmen who build in the country, for the purpose of securing trade in a short time, and by the nobility around their fish ponds and mill-dams, and along their water-courses and avenues. This is the principle wood used in the manufacture of gunpowder in England. It has also been asserted by several English noblemen that their fish succeeded much better in ponds succeeded by willow (salix alba) than in water where other trees were contiguous.

The prices of cuttings in England are as follows: 1 year old, £1; 4 years old, £5 10s.; 5 years old, £6 10s. For any kind of willow it requires 1200 cuttings to plant one acre; cuttings three years old will pay an interest the year after planting of about 25 per cent. The second year of at least 50, and the fourth year the crop ought to yield 1½ tons.

Capitalists are generally contented with an interest of 10 per cent. per annum while here is a business which will pay at least ten times that amount.

There are hundreds of thousands of acres of land at present in this country not paying 2½ per cent. per annum, which might be planted with willow, and would yield an immense profit.

The facts stated by me are open to all who may think proper to investigate. We send clocks, corn, flour, shoes and broom corn to England, and I can see no reason why we can't send willow there. I am fully convinced that willow may be grown profitably in this country at $50 per ton weight. It may be asked and wondered why I do not go extensively into this business myself. The question is easily answered. I have not the capital, but am getting into it as fast as my limited means will permit. If I had the means I would purchase lands and plant thousands of acres of willow, and find a ready market for it. In conclusion, I have to say, that I have no cuttings for sale myself, but I will cheerfully give any reasonable explanation to any inquiries by letter, post-paid.

WILSON G. HAYNES.

Garrison's Landing, Putnam County, N. Y.

From the Scientific Museum.

Remedy for the Yellow Fever.

We have seen it stated in a number of our exchanges that a remedy for yellow fever has been discovered at Angostura, Venezuela. The remedy is the plant vervain or verbena, which grows abundantly in that region. The expressed juice of the leaves given in small doses three times a day, with an *enema* of the same every two hours is stated to be a perfect cure for the yellow fever and black vomit, even in their most threatening stages. All the physicians of Angostura have adopted this treasment of the disease, and they state that hardly any deaths occur under its influence. This information is furnished by Mr. Mathison, the British Vice Consul at the above place.

The varieties of the verbena growing in the warm and temperate regions of the Western world are numerous. The particular species referred to above, is known to botanists by the name of "verbena jamaicensis." It is a native of the West India islands, as well as of the continent. There are two kinds of it, the male and the female; the latter is the one used as above. It has long been known to the creole population of Spanish America for its medicinal virtues. They have used it as a febrifuge and an unfailing specific in cases of dysentery. It is generally given to children as a tea, mixed with sugar and milk, and is by no means a disagreeable beverage. The expressed juice of the plant forms a cooling purge for children in fevers. The vervain is likewise a remedy of particular note in sundry maladies that defy ordinary medicines. Sloane says it is a powerful deobstruent; according to Barham, it is likewise an excellent vermifuge. And, having now been discovered as a cure for yellow fever, the shrub must in future rank as a still more valuable addition to the pharmacopœia.

OYSTER SHELLS FOR FRUIT TREES.—A correspondent writes to the Germantown Telegraph as follows:

"One of the most effectual applications I have ever made to fruit-trees in an old barren situation, is a compost in which finely broken oyster shells was the principal ingredient. The oyster shells have generally a large per centage of saline matter attached to them, in a fresh state, with some animal matter, and much lime. By breaking them and mixing them with wood ashes, and spreading it around old trees, an almost immediate and decided improvement will take place."

The Caterpillar in Cotton.

The following letter in the Concordia Intelligencer will prove of interest to cotton planters:

I send you the following, my plan for preventing the caterpillar in the cotton field which you may publish, if you think proper, for the benefit of the planting community. My doctrine is, no cure no pay.

The whole existing creation is inclined to seek for light and white colors; even man cannot help admiring white objects. The butterfly is particularly fond of them; they go where they please, having the advantage of wings, possessing very little instinct, and having no incumbrance to reach the spot they seek. They will not only go to white objects, but will remain there, be well contented, lay their eggs, (about fifteen hundred each,) and hatch there.

For the purpose, therefore, of gathering their eggs, I will place three or four clean white linen or cotton flags, of about a yard square, for each acre of cotton, standing about from two to four feet above the cotton. They will hatch on the flag, but there being no food for them on it, and not being able to go in pursuit of any, combined with their inability to stand the heat of the sun, they cannot live. The flag should be set in the field a short time before the coming of the butterfly; but they must be clean, as all love neatness and purity.

To draw them from a further distance, I would put up flag six feet square, standing from four to six feet above the cotton; cut a hole large enough to place a lantern, showing light on both sides. But experience has proved to me that the light is of no great necessity, notwithstanding I have so instructed the patent office.

Both the above plans answer very well. I am fully convinced of the benefit to be derived from them, and wish planters to be satisfied before I claim one cent. For further inquiries, direct to

J. B. MAILLET.

Trinity, La., June 11, 1853.

Winter Food for Stock.—There is no doubt now that many a farmer wishes he had sown a little Indian corn the past season, for the purpose of eking out the fodder for his half-starving cattle during the present winter. Sowing Indian corn for fodder is one of those new practices which have come into vogue among enlightened farmers within the last ten years; and if it had been generally adopted the past dry season, would have been millions of dollars in the pockets of the husbandmen of this country, saved thousands of poor and almost worthless cattle from the butchers' shambles, and other thousands from what is akin to prolonged starvation.

Every farmer ought invariably to sow one acre of Indian corn for odder for every ten head of animals which he keeps. In case of a drought, he will then obtain food enough from this source alone to winter one third his stock, which would have the effect of lessening the price of hay, and enable him to retain or sell his surplus stock to great advantage. American Summers are often dry, very dry. Improvident, indeed, then, is that man who depends entirely on grass for his stock; for a dry season cuts off from one-third to two-thirds of his crop. But with Indian corn it has not the same effect. Plough deep, manure well, and let the corn get one month's start, and it will take pretty good care of itself after that through the season, wet or dry. Sown in drills one or two feet apart, the corn soon shades the ground, retains all the moisture of the soil, and nightly gathers in by its long, broad leaves, nearly enough from the dews of heaven to keep it steadily along in its growth. By ploughing deep, it has the additional advantage of sending its roots in far below the surface of the soil as to be in moist ground, however dry it may be above.

Indian corn is the greatest boon that a benificent Providence has yet sent to the American farmer. With plenty of the grain and stalks of this invaluable plant on hand, he is never absolutely in want, and can carry himself and stock through the severest winter, and come out in the Spring in good condition. But its proper cultivation is not yet half, no, not even one fourth in the United States. The crops of the grain may be easily doubled, and the crop of stalks be quintrupled, and all this with little additional labor on the part of the farmer. With proper ploughs, planters and cultivators, one man and a horse could as easily cultivate as much corn on a free soil as five men and horses now do; and we are of the opinion that a reaper may be so constructed as to cut it when grown for fodder with nearly the same facility as rye or wheat is now cut, and that other machinery could be invented to facilitate drying and stacking when wanted for winter fodder. Then comes the horse-cutter, which, driven by a single horse-power, will cut a ton of stalks easily in two hours, and a steam-vat will prepare it in two hours more in the very best manner for stock, and very fond, indeed, are they of it thus prepared, and one ton will do the grateful animals as much good as two, or perhaps three tons thrown to them in the ordinary manner in the open yard or field. We shall have more to say upon this subject about planting time.

It Pays to Use Manure.—That it pays to use manure, the success of a farmer in Centreville, Md., abundantly proves. He purchased a farm in 1844, which had previously produced scarcely enough to support a family, and in the nine years which have since elapsed, he has used 10,998 bushels of ashes, 17,865 bushels of stone

lime, and 9,700 of shell lime, besides street manure, in all costing $3,224 68. In 1844, the produce of the farm sold for $491 58, and it gradually increased until 1853, when it sold for $3,504 47. The sales of the nine years amount to $15,215 20, or $12,390 52 over and above the cost of the manure. At the rate of the yield of 1844, the aggregate sales of the 9 years would have amounted to only $4,424 22, so that he has a clear gain from increased produce of $8,560 30, by the application of manure for 9 years. The increase of labor employed should also be taken into account, but even then, a handsome profit is shown from the use of these fertilizing materials.

These figures speak for themselves, and render comment scarcely necessary. An increase over $3,000 in the produce of a single farm for the addition of manure, is certainly a convincing argument.—*Country Gentleman.*

From the Valley Farmer.

Fruit Trees.

All agree, says a leading cultivator of fruit in Massachusetts, that the proper and only judicious method of preparing the soil for fruit trees, is by sub-soiling or trenching the earth to the depth of eighteen inches or two feet, and that, during this process, the upper and lower soils, together with the appropriate manure, should be thoroughly incorporated; the cultivator who is not willing to take these preliminary measures, had better abandon the project of raising fruit trees, and save both his time and money.

Downing states that the best compost for fruit trees, is peat and ashes: 5 bushels of fresh or ten bushels of leached ashes, and a wagon load of peat, containing lime, potash and phosphates.

Let this compost lie a fortnight. Add to every cart load two bushels of air-slacked lime for apple trees.

Add half bushel of ground bones, two bushels of leached ashes, or five pounds of potash dissolved in water, for pear trees.

Add half bushel of lime, half bushel of ashes, and a peck of salt for plum trees.

Add two bushels leached ashes for peach and cherry trees.

Add a bushel of lime, a bushel of ashes, half bushel of plaster for grape vines.

This compost may be put on two inches thick, and forked in, so as to cover the ground as far as the roots extend.

The proportions will vary accordiog to the quantity of compost to be made.

By the analysis of Dr. Emmons, the ash of the apple tree contains more than one half lime; so lime largely preponderates in the manure. The ash of the pear tree contains the largest amount of phosphate of lime; so bone dust should preponderate in the manure.

How to Preserve Manure.—We clip the following from an article copied into the papers from an unknown source. Farmers will do well to heed the advice:

Waiving remarks on the laws of nature requiring a deeply and finely pulverized soil for another articcle, we will, in this, consider manures as furnishing food for plants. From repeated experiments it is ascertained that the state of animals contains a great amount of nutriment, or food for plants; and that similar effects are produced by applying the droppings of fowls, (guano,) animal manure, (the blood and offal of slaughter yards,) &c., &c. Much of the value of these is liable to be lost by putrefaction and evaporation. By chemistry we ascertain what this is, and how to retain it. It is well known that in cleaning horse stables, especially under the floor, there is a very pungent smell. The same is true in opening a heap of stable manure that has been thrown up and is heated. The smell is produced by the escape of ammonia, which is the essence and value of the manure. The loss is greater from privies, because their contents are still richer and more highly charged with fertilizing gasses. How to retain these, and to fix them in a state in which they will remain until used by the growing plants, is a question of high importance, which a scientific knowledge of these elements alone can answer. An English writer says: "Before you begin to clean out your stable, dissolve some common salt in water, if for a horse stable, say four pounds of salt dissolved in two buckets of water, and poured through the noose of a waterpot over the stable floor an hour or so before you begin to move the manure, and the volatile salts of ammonia will become fixed, from their having become fixed salts, from their having united with the muriatic acid of the common salt; and the soda thus liberated from the salt, will quickly absorb carbonic acid, forming carbonate of soda."

New Cotton Press.—Messrs. W. F. & C. J. Provost, of Selma, have invented and constructed a new cotton press. The State Sentinel is authorized to say that one of the party offers to bet five thousand dollars that he can press with W. F. & C. J. Provost's new press one hundred bales of cotton, weighing four hundred and fifty pounds, in twelve hours, and all the ropes shall be put on with two hands, six ropes to each bale; or he will wager the same amount that he can press seventy-five bales, weighing six hundred pounds, in the same time and with the same force. There is no process now used in the South, we learn from many of our farming friends, that can surpass that the mode of the new press used by the Messrs. Provosts of this city. This press is well worth the attention of cotton planters.



American Cotton Planter.

MONTGOMERY, ALA., OCT.., 1853.

N. B. CLOUD, M. D., EDITOR.

Our Agents.

Wm. Strickland, Book-seller, No. 28, Dauphin street; Boullemet's Literary Depot—corner of Royal and Dauphin street; H. H. Carver & Co., Battle House Book Store, Mobile; from any of whom the back numbers may be had.

A. P. Pfister, Exchange Corner; C. R. Hansford, Market street, Montgomery.

With *The American Cotton Planter*, our agricultural friends will find all the new and valuable publications of the day, either literary or agricultural, at the above-named Book Stores.

Mr. Amos Travis is our agent at Gainesville, Sumter county.

Mr. N. Plumb, Sparta, Conecuh county.
E. B. Fox, Sandy Ford, Fla.
Capt. J. Jack, Havana, Greene county.
Wm. G. Brewer, Tuskegee.
H. C. Bissell, Carlowville.
Dr. Wm. Cunningham, Burnt Corn.
Dr. J. F. Dortch, Camden, Ala.
E. J. Capell, Esq., Rose Hill.
Isaac Parks, Oak Bowery.
Dr. Batt Peterson, Clayton.
Jas. Montgomery, Fife, Ala.
N. A. McMillan, Canton.
Dr. J. E. Poellnitz, Montpelier.
Dr. John A. Whetstone, Bastrop, Louisiana.

G. M. Reynolds Mr. Turnir, Mr. B. M. Clark, and Mr. H. P. Douthit are our traveling agents.

Work for the Month.

The work for this month is by no means the least interesting that claims the planter's attention during the year.

Almost the entire business of this month is to gather and garner up the produce of his fields. All the corn should be gathered and housed up securely and carefully early in October. If allowed to remain in the field after this, it is liable to injury and waste from various causes. The business of cotton picking should also be prosecuted with vigor this month during all the time that can be spared from other more important work. This is the more important, as a day's work now is worth two in November, when the cold and frost come on.

It may appear almost a work of supererogation in us to include the sowing of wheat among the important duties of the planters to be performed this month. We intend, however, to risk the consequences, and insist upon the importance as well as the necessity of this thing of raising our own wheat. We can do it, without doubt, and our success is certain, if we determine it. We have before us a sample of wheat at this time, raised by a widow lady, and a reader of the Cotton Planter, too, grown not fifty miles from La Place, that is as fine wheat as we ever saw, and sold in the city of Montgomery at $1 50 per bushel! the present season. This lady does not believe in this "can't be done" philosophy, nor do we.

We hope many of our planters will make the trial. The "dark nights in October," the Dutchman says, is the right time to sow wheat. We don't know what influence the "dark nights in October" have upon the *wheat*, the *land*, or the *sowing*—this thing we do know, however, that the "dark nights in October" come on at a very good season for sowing wheat.

Select a good piece of land that has been in corn the past Summer, and if it be not rich enough, and it is not, if it did not produce thirty to forty bushels per acre,—plow it deep and thoroughly, and then spread on 250 lbs. to 300 lbs. guano, or its equivalent of cotton seed or other manure, that is in good condition for such crop, and then harrow it in; then sow your wheat; having soaked it first 24 hours in strong warm brine, say three pecks per acre, a good crop of good wheat will be the result.

This is the month for digging and housing sweet potatoes. Immediately after the 20th digging should commence, that they may be gotten out of the ground and housed before frost. Many persons allow their potatoes to remain in the ground till the "frost kills the vines," nor will they dig till this is the case. It is a practice exceedingly unwise and objectionable. If an early frost fall, as is sometimes the case, by the 20th of October, and kill the *leaves merely*, the injury is not serious. If, however, as is more frequently the case, they be allowed to remain till the first of November or later, to have the "vines killed," the potatoe will certainly be damaged, and the difficulties of keeping them through the Winter greatly multiplied. A frost severe enough to kill a potatoe vine, will freeze the ground to some extent,—nor can this occur without more or less injury to the root.

Agricultural Association.

The approaching meeting of this Society at Columbia, S. C., which commences on Thursday, the 1st day of December next, promises to be one of spirited interest. We have received letters from fourteen of the gentlemen selected by the Executive Council, who have promised to meet and address the Association on the subjects severally assigned them. In our November number we shall give the names of the gentlemen and their respective subjects, as we shall have had answers from all elected by that time.

Prospectus of our Second Volume for 1854.

The response which we have already received from subscribers in various sections of the country, to the appeal which we made to their public spirit in our August number, encourages us greatly in the hope that our humble efforts have not been altogether devoid of interest among planters.

We have yet complete setts of the back numbers to supply the friends of any of our subscribers who may yet intend to procure one or more additional names.

On the second page of the cover will be found the prospectus for the second volume of the American Cotton Planter. To those of our friends who know us personally, much that we have said in our Prospectus may seem unnecessary, as they know well that, by the aid of our rapidly increasing corps of intelligent and practical correspondents, we intend the Cotton Planter shal be second to no agricultural periodical published in the country.

We are pleased to be able to state to the numerous friends of this enterprise that such arrangements are now made with all, publishers, paper manufacturers correspondents, &c., as to enable us to expunge from our vocabulary, *failure in any particular.*

We think we can refer our friends to the past numbers of the present and first volume as a safe earnest of what may be reasonably expected in future. Our position in the city of Montgomery, the very center of cotton-dom, and one of the most flourishing inland cities in the South, immediately on the great mail route to the South-West, gives us facilities rarely equaled.

It only remains for our friends, agents, and, we may ask, our subscribers, to exert themselves a little, and the American Cotton Planter stands unrivalled in its course of practical utility.

The Right Spirit to Make the South Independent.

We subjoin the following extract from a private letter, without the consent of the writer. We are sure the author will appreciate our object, and pardon the liberty we have taken with a letter strictly private. We have said in the caption of this notice, that it contains "the right spirit to make the South or planting States independent." While we are free to admit that this "one crop system"—for the perfection of which, cotton planters have made themselves notoriously conspicuous—has not been entirely devoid of advantage; yet we must and shall continue to insist upon a change of policy among our planters. The goose is ours; she will, certain and no mistake, give us every year the brighest, richest and most valuable golden egg! No other people have her kind or can procure it! Then how foolish, like "Æsop's Scholasticos," shall we be to pursue the "one crop system" to the extreme danger of crippling, at least, our golden heritage. How changed the tenor of our friend's letter. But very recently, and letters of inquiry, agriculturally, were for "*multibole cotton seed.*" Our friend enquires entirely for the best kind of small grain for stock, and the kind of grass that will make the best hay, and furnish the finest pasturage.

This man has an idea that a fine Saxon merino sheep, Cotswold or South Down, a fine mule and a fine milch cow can be grown in Alabama as cheap to him and to every other cotton planter as Kentucky or any of the North-Western States can produce, and as he has determined to provide the means of success, the fine stock will be the necessary consequence. His land will grow rich, he will grow fine cotton, and what is more interesting, he will realize more money, more comfort, true happiness, and will be an independent cotton planter. This is what we want to see all over this happy land. No worn-out fields or ugly gullies, but fine grain crops, meadows and grass lots, fine stock of every kind, such as our climate and peculiar advantages entitle us to, and then all of our cotton will be "good middling to fair," and command the highest market price.

Any of our subscribers or correspondents who are acquainted with the true Egyptian oat, its value, &c., with blue grass and timothy, and the practicability of growing them at the South, or any other valuable grass, even the "Rescue," will confer a favor by communicating such information for our columns. [Ed.

La Vista.

Sept. 8, 1853.

Dr. Cloud—*Dear Sir*—Mr. Afflick, in his "Rural Almanac," speaks very highly of the "Egyptian Oat," and I write you to make some inquiry about it. Have you ever tried it? What kind of oats are they? How do they compare with our big black oat? and if they are of a superior quality to our black oat, to ask you where they can be obtained, and the probable price per bushel, and how think they should be sown on thin land, and at what time? Here is a string of inquiries for you.

Recollect the "Muskeet Grass Seed" you were kind enough to promise me. Is it not about time they were sowed? How think they must be sowed on thin land, for I really have no suitable place for them that is, or that I now can make rich.

What kind of grass is this "Rescue Grass" of Iverson, of which he speaks so boastingly in the last two numbers of "The Soil of the South." If it is, what he represents it to be, is it not *the thing?* I think I will put my name in for a chance.

Have you ever tried "Blue Grass" or "Timothy" at "La Place?" If so, do either of them succeed? and would you sow on land well cleared, or on such as had the sapling still standing? Now, Doctor, I have given you at least forty questions to answer, and if you cannot find time to answer them all now, why tell me about the Egyptian Oat, and leave the others for another time. By the way, do you suppose the Egyptian oat could be obtained from the Messrs. Adams of Mobile?

J. McC. W.

Discoveries in Animal Physiology, and Improvement of Domestic Animals.

We received too late for our last number from an esteemed friend as well as subscriber, an illustrated Prospectus for the "immediate publication, by subscription, of a work under the above titie."

Our friend writes us that he is personally acquainted with the author, Mr. Denton Offutt, and knows him to be a man of talent, tact and unusual skill in the treatment, in every way, of domestic animals.

This prospectus is accompanied by innumerable certificates of gentlemen of the first respectability in Kentucky, such as Hon. Henry Clay, Professor B. W. Dudley, M. D., &c., &c., some of which certificates, if we had room, we should be pleased to give. It must suffice now, however, that if the Book, (and the only work of the kind extant,) be at all such as is indicated by the prospectus, and from the certificates, we have the most reasonable hope to expect it,—it should be in the hands of, read and studied by, every planter in the country.

What planter does not feel often, and regret the paucity of information in regard to this important subject? How little do we know generally about our domestic animals?

This work is offered to subscribers at the moderate price of $5, or in clubs of 5 at $4 per copy.

Subscribers direct to Lexington, Ky.

[FOR THE AMERICAN COTTON PLANTER.]

The Comet.

NATIONAL OBSERVATORY, S. C.,
September 2, 1853.

SAMUEL SWAN, Esq., Montgomery, Ala.:

Sir: Your letter of the 26th August is received. The body to which you refer is a comet discovered by M. Klinkerfus, at Gottingen, on the 10th June last. Its orbit does not resemble the orbit of any known comet, and it is certainly not identical with the comet of 1264, which has been expected since 1848.

This comet passed its perihelion on the 1st Sept. It will be nearer the earth on the 5th September, at which time it may, possibly, be visible in the day time. Its distance from the earth on that day will be 0.7128 of the mean radius of the earth's orbit, or about seven-tenths the distance between the earth and sun. It is now moving rapidly westward and southward, and will soon be invisible in this hemisphere.

The elements of the orbit of this comet have already been published in several of the newspapers.

I am very respectfully your ob't. serv't.,

GEORGE MINOR,
Lieut. and acting Superintendent Nat. Ob'y.

[FOR THE AMERICAN COTTON PLANTER.]

Agricultural Fair.

DR. CLOUD—*Dear Sir*—The second Annual Fair of the Robinson Springs Agricultural Association will be held on the 2d, 3d and 4th days of November next at their grounds in Autauga county.

The Society have prepared stalls for all stock offered for exhibition and shelter in safe houses for such articles as require protection from the weather. One or more orations will be delivered on suitable subjects by distinguished agriculturalists. The agricultural world is cordially invited to attend.

J. HALL, Secretary.

The Premium List of this flourishing Society will be found in the July number of the Cotton Planter.

[FOR THE AMERICAN COTTON PLANTER.]

Yellow Clover.

BEAUFORT, S. C., 29th August, 1853.

DR. CLOUD—*Dear Sir*—Your favor of the 15th inst. was duly received. My experience with the mis-named Yellow Clover, (Medicago maculata, or spotted Lucerne,) owing to a succession of dry seasons, has not been sufficient to speak definitely regarding it. I am, however, inclined to think it will be valuable for Winter and Spring pasturage. If it will bear grazing, and continue to afford a good bite, it will be invaluable to the South. My seed came from Forkland, in your State, and cost more than its weight in silver, and was not dear at that price, as a small quantity carefully planted in drills, and kept clear of weeds, will yield an immense quantity in seed.

Very Respectfully yours,

JOHN MILNE.

Montgomery County Fair.

We ask the attention of our readers to the Montgomery County Agricultural and Horticultural Fair, &c., which takes place in the city of Montgomery on Wednesday, the 12th of October. We hope our friends are fixing up for the several departments, and intend to enter into the exhibition with spirit and interest. A beginning must be had. The Premium List is to be found in our September No.

Plantation Economy.

[FOR THE AMERICAN COTTON PLANTER.]

Cotton Culture---No. I.

EDWARDS, MISS., July 15, 1853.

DR. N. B. CLOUD—*Dear Sir*—I am fearful I will be misunderstood, yet I conceive it my duty, particularly at this time, to give what is regarded by a few as sound doctrine in the cultivation of cotton.

The Premium Essay, by James M. Chambers, accepted by that very worthy "The Southern Central Agricultural Association," goes to the world and the rest of mankind, not as Mr. C's opinions, but as the mode of operating best suited. If I am right in my opinion, then it should be known—if I am wrong, I *want to know*.

I do not dare to undertake a critique—men's opinions are their own property—but I do dare to say that the following contains unsound doctrine, and as such, I oppose it.

On page 202, alluding to ridging up, the essay says: "I think in this work we have often followed too much the example of our neighbor, and have looked too little to reason (?) in the indiscriminate bedding and high elevation of all lands. I am the advocate of deep, soft beds, made by very thorough and close plowing, but cannot consent to the necessity or benefit of elevating such lands, which are warm and dry, and which are not subject to inundations from excessive rains. For the convenience of culture, I would have the young cotton stand on a slight elevation, but when the condition of the land did not require it, I would not give it more."

If I can comprehend this, the essayist advises, "for the convenience of culture," a "slight elevation on most lands. Or otherwise, if not subject to inundation, no ridge needed, only for convenience. Just here I dissent. Do I understand?

Please refer to quotation where I place the note of interrogation. And please bear in mind my experience is based on the soils of Mississippi. The essayist may be right and I may be right, or one or the other wrong. But let us look to reason! Do we not know that dry seasons are best for cotton? Then is it not reasonable that the best plan to prepare cotton land is to ridge up, not for convenience, understand, but for the greatest result?

I take the affirmative. I have made, now ready, the twenty-third crop in Hinds county, Mississippi, have rode through twenty-eight counties of Mississippi, several parishes of Louisiana, a part of Arkansas, Tennessee, Alabama, Geo., and S. C., and with the object always in view to improve myself in agricultural matters. Yet I may err. But I give it as my deliberate opinion, that on all lands not decidedly hilly, a bed is *necessary* for the best yield of cotton that the land is susceptible of producing, and that the ridge cannot be thrown too high with any plow made by the Boston manufacturers, nor such as I have seen brought down the Mississippi river for sale. If the land is ploughed with the view of turning over the land, say a plow cutting 8 to 9 inches of a furrow slice, with 6 furrows to the row of 4½ feet, after the first laid off to bed to. That is, let the plow cut less than a full slice, so as to be certain that all land has been turned over.

And more. I place importance on this. I appeal to the planters, who desire to see every man follow the best plan, and challenge a fair trial.

Will the Central Society offer a premium to test this theory? Cultivate one acre level and one as high as the average turn plows will throw the soil. I am not captious. Take all lands not hilly. I believe the result will exceed a difference of 1a2 per cent., enough where a man cultivates only one acre, especially as it is more *convenient*.

Why, sir, I have had 9 furrows run to the 4½ feet row with the view of making a high bed, and every foot of land I cultivate will bear such high beds. The same subject was a matter of debate between two Colonels and myself; they took the level culture and I the ridge, as I do now. Of course I could not prove it to them, but I asked them to appeal to their oldest hand, who was a sensible negro, or go to old men who had made their living by working, and yet who had tried experiments, but not appeal to Colonels who sat in the parlor with a cigar in their mouth most of the day. They were both wealthy, and exceeding clever men, one of whom to name would be to bring much weight against me—but some three months after he acknowledged I was correct.

But again. I do not want "deep, soft beds." I desire the plowing to be deep, even 6 to 8 inches, but the bed to be firm, as a few heavy rains will make it, such as we have in March and early in April. Where beds are soft, cotton will die out, work as you will. Please, my dear sir, consider I have no other object but the advancement of our cause. I do not think I have an ambition, if able, "to make the less appear the better cause."

Yours truly,
M. W. PHILIPS.

[FOR THE AMERICAN COTTON PLANTER.]

Cotton Culture---No. II.

EDWARDS, MISS, July 15, 1853.

DR. CLOUD—*Dear Sir*—Remember the essay goes to the world backed by the most august name it could re-

ceive: the agricultural wisdom of our sister State. May her citizens long, long enjoy so great reputation for doing good—and, therefore, the more necessity for some one to point out errors in principle, if there be.

I have been accused by one (who would be, if he could, a great man, as he is in his own esteem,) and in the public press, too, as having a sort of Don Quixotic disposition to attack wind-mills, and I did acknowledge at that time that I had attacked wind, but mistook it for a gentlemen. I do not think this is my character—at all events, I hope I do not unnecessarily find fault.

What I complain of now is found on the left hand column, 203d page, and is as follows: "At this first working, unless in lands already very soft, I should advise the siding to be close, and to be done with some plow which would break and loosen the earth deep about the roots of the young plant. Others may theorize (?) as they choose, but with a plant sending out a tap root upon which it so much relies, and striking so deep into the earth as that of cotton, I shall insist upon its accommodation by providing a soft, deep, mellow bed into which these roots may easily penetrate."

Will that Society use the cant phrases of the croaker family to turn into ridicule the very thing it works to promote? "Others may theorize." Should we not all theorize more than we do? We should, I humbly think, be well prepared to assign a reason, a valid reason for all of our work, and let others ridicule theory. But to the point.

I object to "siding"—barring off entirely, or if admissible at all, to be done after the cotton has been scraped. Do we not see a difficulty in scraping, even without anything preceding the hoe to preserve the stalk upright on lands which are soft?—the hoe causing earth to crumble down, and the stalk to fall, or be washed down by the first rain. One of the best planters I ever knew, a Mr. Joseph H., living in Rankin, Mississippi, always scraped twice; the first time without a plow, the second time after barring off. My own plan, the mode of many in this section, I think, is to scrape with a scraper or turn plow—that is, shove off the side of ridge, then scrape with the hoe, and as soon after as is convenient, earth, mould, or dirt, as you please to term it, with a bull tongue.

Land that has been plowed deep in March or early in April, cannot become too hard early in May, our usual scraping time. We earth early for two reasons, 1st, That the plant may have earth around it to cover the scraped bed—for we scrape all the top earth away with grass and weeds—it matters not if there be no grass—and to cover, if accidentally any grass be left: and 2dly, that the ridge may be made narrower, so as to drain sooner and get warmer, than if all left. Never to accommodate the plant "with a soft, deep, mellow bed," for we provided that when we bedded up the ridge.

I remember when a boy, some thirty years ago or more, to have heard Mr. Nicholas Herbement, the great vigneron of 1820 and thereabouts, in the South,* give directions to my father to cut off all the superficial roots of the grape vine, so as to force it to rely upon its deeper roots. I have cut off the roots of the pear when not bearing, with the view of forcing it to fruiting, as also of the grape or other fruit bearing plants; and I ask why not theorize enough to try the principle on cotton. Not any time to be "deep and close" near to plant, yet to be near enough to check its rapid growth.

I find cotton, when cultivated superficially and nearly level, if on good land, to make much wood and but little fruit. But by cutting a furrow from the plant, to e returned in a few days, the plant stops growing and joints close. It is rather dangerous, for if the earth is not returned soon, the plant is injured. Of course I refer to cotton of some size, say in June. Then why not use Broyle's subsoil? This is theory, and I give it as a nut to be cracked by those having good teeth.

If a planter has good land, and lying favorably, he can make good crops with almost any culture. But when land gets to producing only twenty bushels of corn per acre a fair season, he will find it takes some theorizing and some work, or some thinking and some work, to get 1000 or 1200 pounds of cotton. To prevent this deterioration of land, is the great desideratum, in my humble opinion, and far more to be desired than big crops of cotton or big hogs. All are necessary and all advantageous to have at once, and all can be had at once in a degree, by the right way. What is the right way? Research, diligence and time will tell, if aided by true theory.

Yours truly,

M. W. PHILLIPS.

* MEM.—"A theory is founded on inferences drawn *from principles which have been established* on independent evidence."—Olmsted quoted by Webster—italics mine.

[FOR THE AMERICAN COTTON PLANTER.]

Important to Cotton Planters.

DR. CLOUD—*Dear Sir*—I have been advocating through another channel, (which I have, no doubt, your critical agricultural tact has observed,) the importance of gathering cotton as soon after it opens as is possible, although it should be picked regardless of order. To sustain the opinion that the loss on sale because of trash is not comparable with loss from exposure in the field, I have conducted an experiment very carefully to ascertain the loss caused by submitting cotton to be exposed to the vicissitudes of heat and moisture, which resulted as follows: I took some cotton that had not been exposed to rain, much sun or dew, it was fully opened and dry enough to be ginned; it was kept in a dry room for several days to permit all of the moisture to escape, the seed removed and cotton weighed. After which, it was saturated with water, and then dried in the sun, then weighed again; the loss in weight proved to be nine per cent., besides the impaired color and texture, and the ab-

sence of the adhesive matter that is so abundant in freshly opened cotton, which greatly facilitates thread making, the liability to break being lessened by its presence. I should suppose it not likely that nine bales of trash would be collected in gathering ninety-one of cotton, although we were to include all that was found adhering to it, and have no idea, if gathered in this manner, that the trash would affect the sale of a hundred bales with a loss of nine. But suppose it did, (which is not a supposable case,) would we not get it back with interest in the increased quantity of cotton having the desirable color and texture, which gives class to it, and say nothing of the amount of time and cotton that would be saved by rapid gathering. I think the difference in weight between the two methods of taking the trash, or to let all remain that adheres, equivalent to a third in favor of the latter, on an average during the picking season, and it is very certain that we are not allowed anything more in the sale, except the supposed weight of the trash; and the removal of particles of leaf from small locks of cotton by a clumsy fingered negro, is something like picking up pins or buttoning a jacket with frozen thumbs.

There is another subject of interest very nearly allied to the above, on which a few remarks will not be impertinent. I am astonished, and do regret that you have to complain of the patronage extended to the Cotton Planter. Are the planters aware that it is the only organ in the State which is entirely devoted to the cultivation and improvement of the earth, through which we can confer with each other in regard to the honors, emoluments, and advancements of our noble profession? Do they reflect that every political party, religious sect, and all businesses of importance, such as mechanics, mercantile, &c., have their public organ of communication. And then fail to support their own, a profession of incomparably more importance than all of them combined, because they would be doomed to failure without success in planting. If they have found their newspapers to contribute so largely to success in business as to justify a liberal support from them, should we be so selfish as to suppose that our planting business would be less benefited by similar auxiliaries. None of these are the reasons why planters do not sustain their paper; nor is it that the immortal one dollar that it costs, looks to them as large as a wagon wheel; nor is it because planters are averse to receiving or of imparting instruction to one another; but it is a negligent forgetfulness of things outside of their plantations. If any one was to call on the planting community, receive their dollar, and keep the thing settled up without giving them trouble, the two-thirds in the State would take the paper. They should not want this service, they can't expect it, and yet how are they to be induced to do their duty to themselves?

I propose that we make a kind of revival matter of it, let those that take it go and tell others of the pleasures and advantages derived from it, and urge them to do likewise. I will be one of two hundred that will procure four new subscribers and send to the Doctor in time for them to receive the October number.

MARENGO PLANTER.

[FOR THE AMERICAN COTTON PLANTER]

Cotton---Its Prospects, &c.

DR. CLOUD—*Dear Sir*—As the annual period has arrived when commercial men make up their "Circulars," especially in reference to the great staple Cotton, I have, in accordance with a promise made you in the July number of the "Planter," adjusted myself to the task, acknowledging beforehand my inability to do the great subject justice.

I am, however, impelled thereto by various considerations, the principal of which is I am a cotton planter, the steadfast friend of every man in our country who produces cotton, have been a close observer of cotton, its production, consumption and price for the last quarter of a century, and whenever danger is brewing, and exaggerated accounts and statements are made by designing men to the serious injury of the honest cotton planter, (as has often been done,) whether on this or the other side of the Atlantic, our protest should immediately be entered; for let it be distinctly understood that in this, as all other transactions, "honesty is the best policy," and all the planters require or ask in this particular, is that the truth, the whole truth and nothing but the truth should be told, and go forth to the world. The cotton crop of 1852 is now ascertained to be 3,220,000 bales. Of this we shipped to Great Britain 1,728,586 bales; to France, 425,927 bales; other foreign ports, 361,789 bales; leaving only 679,595 bales for the consumption of our country.

We desire every cotton planter and all connected with the article, to notice and mark well this fact, that notwithstanding our crop exceeds three millions bales, yet there has been no accumulation of stock in the hands of manufacturers either in this country or in Europe, showing that the consumption still keeps pace with, and will soon far outstrip production, and in Europe and the United States mills are rapidly multiplying.

In several reports which have come under my observation, and made by those loath to admit th

fact, that should our growing crop reach 3,500,000 bales, the demand will not be more than supplied. Let this admission encourage you, especially as we know this crop will not exceed that of last year, and should we have an unfavorable Fall, too much rain, an early frost, &c., &c., our growing crop may not reach 3,000,000 bales.

The present crop, in addition to newspaper accounts, we have received letters recently from experienced agriculturalists in Texas, Arkansas, Louisiana and Mississippi, the general tenor of which was favorable thus far—that with good seasons, late frost, the crop may equal that of last year—while, if any of the many accidents "which cotton is heir to," should befall it, then the crop may not reach 3,000,000 bales. Here is another fact. We have never made more than three successive good crops of cotton; well, as 1850, 1851 and 1852 were good cotton years, the presumption, yea, the strong probability is, that 1853 will be a decline, and reasoning from analogy, we may not reach the crop of 1850. As to price, I have thought the prices paid were not remunerative, especially when we take in consideration the fact that the Temple of Janus is shut. Money, cheap and abundant, only a fair average crop—business in all the manufacturing and mining districts healthy. I here present the price of cotton every month from last September to the present time:

In the month of September cotton brought in Mobile,	9⅞a9½	cts. per lb.
In October,	9½a9⅞	" "
In November,	8⅝a9	" "
In December,	7¾a8¾	" "
In January,	9a	" "
In February,	8½	" "
In March,	9a9½	" "
In April,	9¾a10	" "
In May, June, July and August,	10a10½	" "

We will now show the price of cotton for ten years past:

In 1842	cotton	was worth per lb.,	8.1
" 1843	"	" "	6.2
" 1844	"	" "	8.1
" 1845	"	" "	6.0
" 1846	"	" "	7.81
" 1847	"	" "	10.34
" 1848	"	" "	7.61
" 1849	"	" "	6.4
" 1850	"	" "	11.3
" 1851	"	" "	12.11

Making a yearly average of 8.12. Now if I were permitted to venture a prediction, after viewing and reviewing ALL THE GROUND, it would be that Cotton Brokers and Factors will not soon see the day when they can buy cotton at any figure under ten cents, and if I might venture further the assertion, it would be that good cotton will, throughout the entire season, range from ten to twelve and a half cents—and should any untoward accident yet occur, (and it may,) it would not surprise me if it brought fifteen cents! and why not?

The highly important and influential conventions held this year in Montgomery and Memphis have exerted a wide spread influence. They have taught us what can be done by union, concert and combination—have aroused our dormant energies, and made us feel that a body of Southern gentlemen, who make annually by cotton 150 millions of dollars, are truly worthy of the esteem and respect of a world.

JOHN A. WHETSTONE.

PRATTVILLE, September 10, 1853.

[FOR THE AMERICAN COTTON PLANTER.]

Green Sand.

DR. CLOUD—*Dear Sir*—According to my promise I send you herewith an exact quantitative analysis of another sample of the green sand of the lower cretaceous formation. One hundred grains in an air dry state contain—

I. Matter insoluble in dilute Hydrochloric Acid.

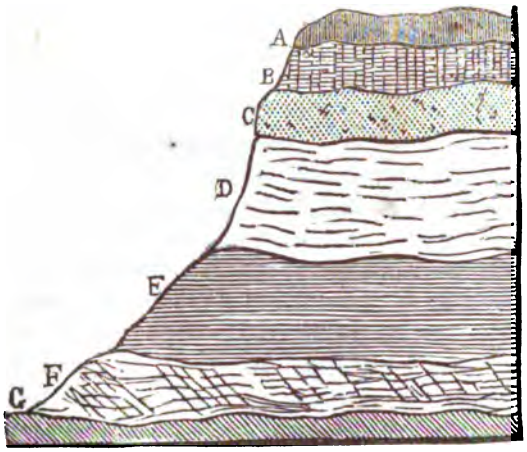
1. Quarzose and chloritic sand,	74.700	per cwt.
2. Finely divided argillaceous matter,	21.500	
	96.200	

II. Matter soluble in dilute Hydrochloric Acid.

1. Silica,	0.450	
2. Sulphuric Acid,	0.044	
3. Peroxide of iron and Alumina,	1.350	
4. Lime,	0.241	
5. Magnesia,	0.069	
6. Alkaline Chloride, mostly Chloride Potassium,	0.350	
7. Phosphoric Acid, a trace		
Hygrometric water and loss,	1.196	
	3.800	

Yours very respectfully,

L. HARPER.



[FOR THE AMERICAN COTTON PLANTER.]

Explanation

Of Section and Front View of Prairie-Creek, three and a quarter miles south of Eutaw, Alabama.

I. This section represents the bluff of Prairie-Creek, where it is most perfect, beginning on the top with the red loamy sand, and going down to the hard argillaceous sandstone. All other creeks in the prairies of Alabama are similar.

A.—Drifted material, consisting of red loamy sand, without fossils full of water worn, round and smooth quarzore pebbles.

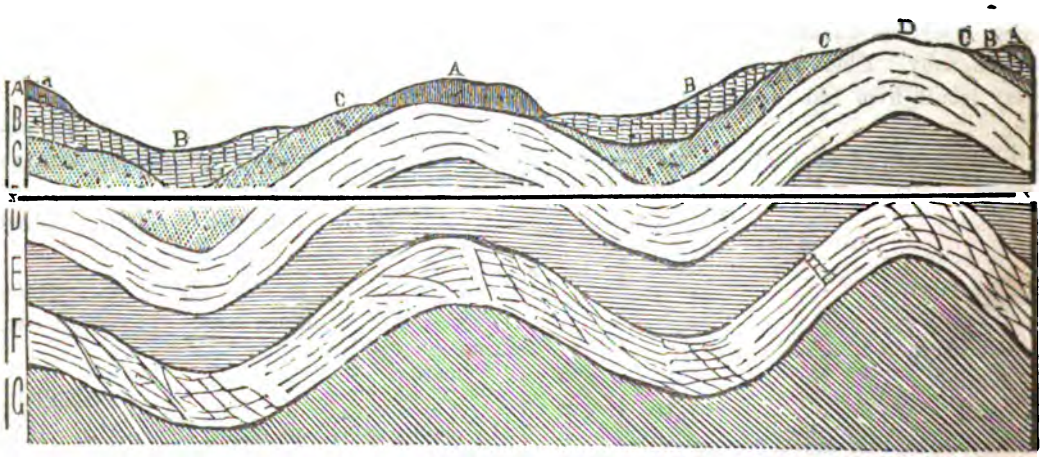
B. and C.—Postpliocene Fresh Water Deposit, full of fossil fresh water and land shells. B. is the dark brown prairie soil, generally called so, and C. is the yellow Post-Oak soil, so called from its growth, the post-oak, quercus obtusiloba, which is everywhere found on it in abundance. Both of the strata, A. and B., are not stratified.

D. E. and F. are strata of the upper cretaceous system of the secondary fossiliferous period.

D. is a stratum of white argillaceous lime, generally called "Rotten Limestone, full of cretaceous fossils.

E. A stratum of blue calcareous clay or gault, generally called Soap Stone, but having no resemblance to it. This stratum contains some cretaceous fossils, for instance, Innoceramus, Rudistes, etc. The strata D. and C. are both stratified.

F.—A stratum of a brown, hard argillaceous sandstone; the lowest stratum of the upper cretaceous system, immediately overlying the green sand of the lower cretaceous rocks. This stratum is full of cretaceous fossils, especially of fish-teeth of the genera Lamna, Corex, Ptychodus, Oxyrhina, etc.



II. The front view represents the creek X. X. having cut its bed through the different strata of the tertiary post-pliocene fresh water deposit into the underlying cretaceous system, and at the same time the surface of the prairies of Alabama. At A. the drifted material of the red loamy sand overlies the dark prairie soil, and forms *sandy land.* At *B.* the dark brown prairie soil forms the surface and produces the genuine *prairie-soil.* At C. the dark prairie-soil has been swept away by the denuding power and the lower stratum of the prairie-soil, the yellowish post-oak soil crops out, forming the *post-oak* land. At D. both strata of the prairie formation, the dark prairie-soil and the post-oak soil have been swept away by the denuding power and the white argillaceous lime or rotten limestone, the upper stratum of the upper cretaceous system crops out, forming white *calcarzous land.* In such places all the fossils of the cretaceous system are found on the surface. In some places even the whole of the stratum D., the rotten limestone, has been swept away by denudation, and the blue clay or gault crops out on the surface. Such places are of rare occurrence.

[FOR THE AMERICAN COTTON PLANTER.]

The Prairie-Soil of Alabama.

BY PROFESSOR L. HARPER, L. L. D., OF EUTAW, ALA.

DR. CLOUD—*Dear Sir*—The State of Alabama is, in a geological point of view, one of the most interesting in the whole Union. It offers in its formation a greater variety than any other State. Its rocks extend from the recent alluvium of the sea coast and the deltas of the rivers through the tertiary or Cainazoic, the secondary or Mesozoic, the primary or Palacozoic fossiliferous formations down to the unstratified and stratified or Hypogene and Metamorphic formation of the Plutonic series. The agricultural, but especially the mineral resources of our State are, therefore, *really immense*—the latter, indeed, more so than we have any idea of. Although a superficial geological glance has made it very certain that the northern part of Alabama hides immense mineral treasures, that must contribute to render our State and population as rich as any in our Union, although the authorities of this State have already succeeded in securing the services of an eminent practical geologist, Professor M. Tuomey, of the University of Alabama, who has shown his skill in an admirable geological survey of the State of South Carolina,—the means of exploring their mineral treasures, and benefitting commonwealths and people by them—I mean *a geological survey of the State*—has, hitherto, been neglected, and even rejected by our Legislature, whose sagacity it can, nevertheless, not escape that the expenses of such a survey are really most trifling compared with the great advantage to be attained by it.

According to a superficial geological survey of Professer M. Tuomey, the learned geologist to the State, we find in the northern part of the State the Silurian or Carboniferous systems as representatives of the primary fossiliferous or Palacozoic period, and in the eastern part the Metamarphic system prevails. It is here where the great mineral treasures have to be looked for, treasures predicted already by the great English geologist, Sir Charles Lyell, when on his geological tour through our State. Although many a fertile tract of land may here be found, especially among the metamorphic rocks, agriculture is here only of secondary importance where mining must bring to day the treasures hidden in the lap of our internal earth. The southern part of our State is entirely occupied by the different members of the tertiary or Cainazoic system, the Eocene, Miocene, and Pliocene formation, by the alluvium of the sea coast and the deltas of the rivers. Here, also, fertile tracts of land are not wanting, but in general the land is too sandy to be fertile. Agriculture can here, also, only occupy a secondary rank, and give way to the preparation and trade of the most excellent timber of the long leaved pine, the cypress tree, the cedar, and other valuable forest trees.

The middle part of Alabama, lastly, is principally taken up by a representative of the secondary or Merozoic period, by the cretaceous system, which is here better developed than in any other of the States of our Union. This system commences in the South-Western part of Georgia, crosses the Chatahoochee river, extends first into Barbour and Russel counties, and occupies the larger parts of the area of Macon, Pike, Montgomery, Butler, Lowndes, Wilcox, Perry, Marengo, Greene, Sumpter and Pickens counties, extending in this State over more than 13,000 square miles. From Sumpter and Pickens counties the cretaceous system extends into Mississippi and turns towards the North-West. The upper part of this cretaceous formation consisting of a white argillaceous marl, commonly called Rotten Limestone, forms the substratum of the Prairie-Soil, a soil of immense fertility, and which, with a *prudent* and *careful* management, would be not only inexhaustible, but increase even in fertility as soon as the superabundance of lime and alumina has a little decreased, and the soil is made less compact by continued cultivation and the application of certain suitable loosening admixtures. In this part of the State agriculture is, therefore, of *paramount importance*, and the labor and expense of the skillful and intelligent agriculturalist amply rewarded.

The Prairie-Soil has, hitherto, been believed to belong to the underlying Cretaceous formation, and to have been formed by the disintegration of the Cretaceous rocks, until I have recently succeeded in discovering the true nature of this fertile soil. The first sight of the prairie-soil convinced me at once that it could possibly not derive its existence from the Cretaceous rocks and form a part of them. The Cretaceous system has evidently been formed at the bottom of a deep sea. It abounds in every one of its constituent parts in innumerable fossil remains of marine animals, and must be the result of the deposition of sediment not of hundreds, nor of thousands, but of many millions of years. Such is the conviction forced upon us not only by its thickness of several thousand feet, but especially by the manner of its formation. The upper stratum of the Cretaceous system, the argillaceous marl or rotten limestone, has evidently been formed of a mixture of carbonate of lime with the stratum next to it in a descending order, the Blue Clay or Gault, commonly, but very erroneously, called the Soap-Stone. The lime is the result of a decomposition of an immense number of cretaceous animals, which must have lived and died, and their shells decayed before the lime was produced, and in a state of being mixed with the blue clay, but such is the slow way of the formation of only *one* stratum of the cretaceous rocks of from 3 hundred to four hundred feet thickness, what an *immense* time it must have required to form the other strata, the blue clay, the argillaceous sand-stone, and especially the stratum of green sand, by itself more than a thousand feet thick; *immense*, indeed, for an imperfect being as mankind, but certainly insignificant for Him who is above space and time.

When the formation of the Cretaceous system was

completed, an upheaval of a large portion of the surface of this part of our globe must have taken place, by means of which, a part of the bottom of a deep sea became dry land. The upper part of the Cretaceous system, the argillaceous marl, was then the surface of the soil. It is very evident that this stratum, without other admixture, was unsuitable for the growth of any vegetation, and could, by the only influence of the atmosphere, never be changed into a soil fertile for vegetation without any other accident.

But it is very evident to the observing geologist, from the very beginning, this globe, which we call our Earth was destined to be the abode of reasonable beings, favorites of its Almighty Creator, and every geological change, every accident tended to prepare it for their reception and comfort. Another change was necessary to transform the sterile argillaceous marl, incapable of producing any vegetation, into a fertile soil.

If we submit the soil of the prairies to a close examition, if we search the gullies, cut by running water, and especially the beds of the creeks, which have frequently very high bluffs, and are cut down not only through the prairie-soil of the surface, but also in or through the argillaceous marl, and often even deep into the blue clay or gault to the underlying stratum of hard argillaceous sand-stone, we find that this prairie-soil cannot have been formed in *salt water*, a great many fossil fresh water and land shells of the genera Paludina, Planorbis, Succinea, Cyclas, Unio, Lymnea, Helix, etc., are deeply imbedded in it. These testaceous animals cannot live in salt water; they die as soon as they are put into it; they live partly in fresh water, and partly on swampy and moist land. We can, therefore, conclude *with certainty* that, in order to produce a fertile soil above the sterile marl, the surface of the cretaceous system was again depressed below the surrounding soil, and filled, probably, by the rivers and creeks then existing, with fresh water and fluviatile sediment. This depression appears to have been sudden, for the eye of an experienced geologist will soon perceive that the first sediment and fluviatile matter has been drifted and swept in violently, and therefore, the lower portion of the prairie-soil appears somewhat stratified, and coarse sand, pieces of wood and even smaller cretaceous fossils are found mixed up and deposited in layers and beds. The surface of the cretaceous system, or at least a large part of it, was then at once transformed into a large lacurtrine pond, and must have been submerged for a long time by *fresh* and *stagnant* water; for after awhile a great many malluscuos animals of the above genera began to inhabit this large lacurtrine basin, the fossil shells of which, although nearly all exceedingly brittle, especially those of Cyclas, Planarbis, Lymnea, are all found in a perfect state of preservation,—very few only are broken,—the two valves of the Unias and Cyclades are even in juxtaposition, which could not have been the case had the water in which they lived not been stagnant,—besides, there is no stratification perceptible in the upper strata of the lacurtrine deposit.

In this fresh water the prairie-soil was gradually deposited. The first part of the deposit was much more mixed with the white marly clay, and is, therefore, of a dirty yellow color, but the proportions of lime and clay decrease in an ascending line, and, consequently, the deposit becomes darker by degrees, until its color is at last a dark brown, that of the real prairie-soil. The prairie and post-oak soil, (so called from the Post-oak Quercus Obturiloba, which grows most abundantly and luxuriantly in it,) is, therefore, the same deposit. The post-oak soil has another color caused by a larger proportion of lime and a smaller proportion of vegetable mould and acids. The prairie soil is dark brown on account of the smaller proportion of lime and the larger proportion of vegetable mould and acids. The water of this lacurtrine basin must have been comparatively shallow, and diminished very gradually, as we find in its deposit not only a great many land shells, and even fossil bones of terrestrial memmal quadrupeds, but the tops of the more elevated hills seem not to have been covered by it.

When the area of the cretaceous system became gradually re-elevated, its surface, which was, previous to its depression, a white barren desert, appeared a nearly uniform dark colored, fertile, rolling country, whose higher elevated hills, which had not been covered with water, showed the only traces left of the white limy soil which prevailed previous to its depression. Had, after that re-elevation, no other change taken place on the surface of the prairies, a nearly uniform cover of a dark brown soil would overlie the whole of it, with the only exception of those that were not submerged under the fresh water, especially the hills of nearly pure carbonate of lime, which extend between the Black Warrior and Tombigbee rivers in a direction from South-East to North-West, and the rocks of which are perforated as if wormeaten, and called Bird Limestone; there would, then, neither have been post-oak nor sandy soil mixed with round pebbles. Sand and pebbles can evidently not have been deposited in stagnant water, but is an entirely foreign material of quite a different origin.

After the formation of the prairie soil another change must have taken place. A current from North-West to South-East must have swept with much violence over the country, for we find not only the traces of an extensive denudation by which, in some places, a large portion of the lacurtrine deposit and other parts, even the underlying argillaceous marl, have been partially, or entirely swept away, and by which a yellow ferraginaceous loamy sand mixed with a great many pebbles, resembling the shingle of the sea coast, have been carried along and deposited in such elevated places that afford resistance to the current. Whether this denuding and drifting current was the consequence of another depression of the country or not, is very difficult to decide. If we

admit another depression we cannot but believe in another re-elevation. It is even difficult to ascertain whether this current consisted of salt or fresh water, as the deposit caused by it contains no fossils, and come, therefore, most probably, from the land side. I found a single Ostrea sellalfarnus in it, but I believe that that Ostrea, which was, besides, very near the surface, came by a mere accident in the ferragineous sand. It is, nevertheless, most probable that the current consisted of salt water, and must have been too powerful and of too long duration for a fresh water current. After a mature reflection, I cannot but think that this current was in connection with that which caused the Northern drift.

This last current has formed a variety of soils in the prairies. In low and protected places no denudation has taken place—there we find the dark brown immensely fertile prairie-soil, with all its fresh water and land shells *partly in a fossil state, partly recent.* On higher places, where some denudation took place, that dark brown soil has been either partly or entirely swept away. Where it has been carried away entirely, we find the yellowish post-oak soil, with all the fossils of fresh water and some land shells, and now and then, where even a part of the post-oak soil has been swept away, we find some of the smaller cretaceous fossils, as for instance, Humulas, Onyx, Serpula, Teredina, Ostrea Cretacea, Ostrea Plumara, fragments of Humites, Scaphites, and Turrilites, teeth of Oxyrhina, Carex and Lamea, etc., mixed with the lacurtrine deposit. Where the current had most power on the tops of hills, and near such tops, even the postoak soil has been entirely carried away. In such places the white argillaceous marl, or rotten limestone, crops out, and all, even the larger cretaceous fossils to the gigantic Innoceramus, of which I found specimens measuring three feet in length, are found. In some of the very elevated places, I have found the whole stratum of the marly clay swept away, and the blue clay or Gault, cropping out. In other places, especially around hills which offered some resistance and broke the current, copious layers of ferraginous loamy sand, mixed with gravel and water-worn pebbles, have been deposited, and there sandy land is found in the middle of the prairies, which is, nevertheless, often very fertile on account of the admixture of the lime of the cretaceous system and the mould of the lacurtrine deposit. This last current has, also, caused a great variation in the thickness of the prairie-soil, and find it, therefore, from a few inches to twenty or thirty feet thick.

To this denuding current it is owing that we find in prairies so many different kinds of soils, and so many different fossils. The circumstance that cretaceous fossils are found in many places is, as we have now seen, by no means a reason why we should classify prairie soil with the cretaceous system, from which it not only differs widely in substance, but especially in *age.*

The cretaceous system is the last link in the secondary or Merozoic period of our globe. Nearly all the animals which lived at that period are now extinct. The secondary period was the age of the Saurian or Lizard tribe, a few mammal quadrupeds of the Marsupial or Opossum tribe were then only in existence, and no other fossil bones can be found in the cretaceous system. In the lacrutrine deposit of the prairie-soil, we find not only such fresh water and land shells which are still existing, which I have frequently found recent in the ponds and swamps surrounding the prairies, and which, as some of the first settlers of the prairies have assured me, were found in immense numbers in the prairies when they were in their original state, but we find there, also, the fossil bones of different species of mammals of the ovine and cervine tribe, and Dr. Park, of Eutaw, has found in it a large tooth of a Mastadon, so pronounced by my learned friend, Professor M. Tuomey, and now in the museum of the University of Alabama at Tuscaloosa. All these animals originate, as we know, only from the latter part of the tertiary or Cainozoic period, and the lacurtrine deposit of the prairie soil must, therefore, be a deposit of the very last part of that period, a *postpliacene fresh water deposit,* corresponding with similar deposits along the river Rhine, in Germany, and there called Loess or Lehm, along the Mississippi river and the great Northern lakes.

I have only had an opportunity of examining the prairies here in Alabama, and especially those along the Black Warrior and Tombigbee rivers, but I have not the least doubt but the prairies in the State of Mississippi are exactly of the same formation, and only a continuation of the Alabama prairies. From specimens of soil from the prairies along the Colerado river in Texas, in which I found the same ingredients, and nearly the same shells, I conclude that also the extensive prairies in Texas are the same formation; if so, this kind of formation would be of great importance in geology.

It is now well understood that the prairie-soil, under favorable circumstances, is the most fertile soil existing, but I have to repeat here that this soil is not now as fertile and sure as it will be in the hands of prudent and enlightened agriculturalists. No soil is more capable of improvement and more remunerating. It contains still too much lime and alumina, which operate unfavorably upon the vegetation, especially in hot and moist weather, and make a thorough-going system of drainage absolutely necessary, in fact more so than any other soil. By a prudent management, an occasional supply of loosening sandy manure, a continual alternation of crops, a replenishment of the alkaline ingredients when necessary, a timely resting or fallowing of the land, it is not only inexhaustible in fertility, but it will also improve from year to year, and prove especially more certain and safe. At first sight it would appear as if the drifting of a large quantity of sandlayers over some parts of the prairies had been a decided disadvantage, but this is by no means the case—these sand-beds yield the very material for the improvement of the prairie soil, where it contains too much argillaceous matter, which is especially the case with post-oak soil.

This soil, being the lower part of the prairie soil, exposed by denudation as we have seen, contains all the elements of fertility. A quantitative analysis of ten grammes, in an air-dry state, taken out of the middle of the lacurtrine deposit, gives the following result:

Specific gravity.....2.230

I. Matter insoluble in dilute Hydrochloric Acid.

1. Silicious sand.....1.482
2. Argillaceous earth.....4.611

II. Matter soluble in dilute Hydrochloric Acid.

1. Silica 0.138
2. Alumina 0.144
3. Peroxide of Iron.....0.805
4. Carbonate of Lime.....1.212
5. Phosphate of Lime.....0.210
6. Carbonate of Magnesia.....0.382
7. Chloride of Sodium.....0.161
8. Carbonate of Potash.....0.132
9. Hydrometric water and loss...0.763

Total.....10.000 grammes

An experienced agriculturalist will easily perceive that nothing is necessary to render the post-oak soil just as fertile as the best prairie soil but a greater quantity of loosening sand. According to the above analysis it contains only 14,320 per cent. of this material, and 46,-110 per cent. of argillaceous earth, combined with 12,-120 per cent. of carbonate, and 2,100 per cent. of phosphate of lime; the soil must, therefore, necessarily be too close and hard in dry weather, and too sobby in wet weather, and entirely too heavy for the cultivation of cotton. The most fertile soil which I have ever seen, the soil of the prairie near the Colorado river in Southern Texas, contains even less soluble or fertilizing matter, but 46.50 per cent. of fine silicious sand. What is, therefore, the best manure for the post-oak soil? Nothing but *sand!* The very best material would be the green sand of the lower cretaceous system, of which there is a great abundance in many places along the Alabama, Warrior and Bigbee rivers; but where this manure cannot be easily procured, any other fine silicious sand taken from the sand-beds overlying the prairie soil in so many places, is a fine manure, the frequent application of which must render the post-oak soil a soil of immense fertility.

L. HARPER.

Eutaw, Ala., Aug. 20, 1853.

Guano.

A recent discovery of guano is exciting attention among importers and farmers. The deposit is said to be on an island 20 miles long by 7 broad, and lying between the Mauritius and Calcutta. There are no strong ocean currents near the island, and convenient loading stages can be erected in the creeks and bays. The deposits extend over the whole island, and samples brought to Britain resemble the guano from Saldanha Bay. Some vessels have been sent out there to bring cargoes home.

[FOR THE AMERICAN COTTON PLANTER.]

Hill-Side Ditching and Horizontal Culture.

Dr. Cloud—*Dear Sir*—I have, for several years past, been very much interested in the subject of Hill Side Ditching and Horizontal Culture. I have studied it intensely, sought information from wherever I thought it could be obtained, and have tried some experiments with such success, that no doubt remains upon my mind of its great utility and entire practicability. As a good deal of interest is being felt upon the subject, and many inquiries made about the mode of performing this, to most farmers, indispensable work, I most cheerfully avail myself of the columns of your excellent paper to give to the public what information I possess. And if I can but suggest a thought or drop a hint that might be an advantage to some one desirous of making a trial, I shall be amply paid for the trouble of writing this communication.

So much has already been written on this subject, that to write more might seem a work of supererogation. But the subject is not half exhausted. The science of hill side drainage is in its infancy, and it is by no means to be supposed that we have already arrived at perfection. Nay, the reason why I am induced to write this communication is that I have not seen yet a plan of Hill Side Ditching published but what was defective in one or more very important particulars.

As I cannot write all I have to say upon the subject in one article, I shall devote the present to the importance, practicability and obligation of this work.

First then the importance of it. There are many good farmers who seem not to be awake to this. To such I would particularly address myself with the hope of awakening in them that interest which the importance of the subject demands. At least three-fourths of the lands in Alabama, with hoe crops, are liable to wash away by cultivation. We have already seen them verging to a state of perfect barrenness—many of them already, to this generation, past redemption. If the former mode of cultivation is not abandoned, what sort of a state for farming, will we have in a few years? But it may be asked, as it often has been, is there no way of preserving land without all this trouble and perplexity of cutting ditches all over our fields and horizontalizing the rows?

I answer for the hundredth time, none. We may plow as deep as we please, and haul out thousands of loads of manure upon our hill sides, but unless we adopt the horizontal culture, our manure, soil and all will bid us adieu, and take their route for the neighboring creek or river. It is true good prairie land, by taking advantage of the hill sides in laying the rows, may be cultivated a good while without washing away. But what is this but an imperfect system of hill side drainage, and notwithstanding this, you will observe here and there a gully running down hill widening and deepening every year. In sandy land the work of destruction is not so slowly accomplished. We may take every advantage the old straight row system will allow, but in a few years, final ruin to the land is inevitable. To how many worn out and almost deserted farms can we not point in proof of what we say? Then in proportion to the value of our lands is the importance of the subject.

But, secondly, is it practicable? Will it pay? To which we answer emphatically, it will. When the country was new, land fresh and cheap, men bought farms, wore them out, sold them for a song, bought new ones, and grew rich under this system. But land is becoming too dear to do so now. Allowing, however, that land was now as cheap as *dirt*, it would be bad economy to pursue the old system, as may be easily proved.

It is readily admitted that as much land cannot be cultivated on the horizontal principle as the straight row, but for the encouragement of those who may be disposed to make a trial of hill side ditching, I will endeavor to show that the difference is not so great as many imagine. Some suppose that, owing to the number of short rows unavoidable in horizontal culture, they cannot cultivate more than two-thirds or three-fourths of a crop. This is a great mistake. As a general thing horizontal rows (commencing and ending at a ditch, which is my plan,) will average 70 yards in length. To plow 4 acres, 2 furrows in a row, of 3 feet width, will require 560 turns. Allowing ten seconds to the turn, the time occupied in turning will be about one hour and thirty-three minutes. The time occupied in turning where the rows are 220 yards long, is about half an hour. Then the difference in plowing is one-twelfth. The difference in hoeing nothing. Allowing that the time lost in plowing is one-fourth, then the crop would not be diminished but one-eighth; for we lose nothing in hoeing. In addition to this, when a horse turns at the end of a row, it gives some rest, loosens the collar, and enables him to hold out better through the day.

But we will suppose that the crop must be diminished one-fourth by hill side ditches, it would then be policy to do it. In order to illustrate this let us suppose that two planters, A. and B., have lands of equal fertility. They have 400 acres each ready for cultivation. A. adopts the horizontal culture, and, consequently, tends only 300. B. follows the old system, and cultivates 400. Of course the first year B's crop is one-fourth more than A's. But A. has one-fourth of his land resting, so the next year, he is not so far behind. In this way A's land, preserved from washing, and being rested every four years, constantly improves, while B's as constantly declines. At the end of ten years, the soil on one-fourth of B's land is gone, although he may still plow it and hoe it, as he does not like these short rows and so many turns, so that not more than three-fourths of his farm yields him more than the worth of cultivation. A's 300 acres now yield more than B's 400. When twenty years have passed away, A. has a valuable farm, with all the necessary improvements to make a comfortable homestead. B., on the other hand, has worn out his farm, and now has to pay a round sum for another, as the reward of his land destroying folly. And in addition to this, A. has made more money on his farm during the 20 years than B., while the latter has had poor improvements and poor living, for, expecting to wear out his land, he made no improvements calculated to make a home comfortable. Now, I ask, is it not practicable?

Lastly, the obligation of hill side ditching. It may seem strange to some that we should speak of the obligation of such a thing. But is it not a duty we owe to our merciful Creator to use properly the blessings he has conferred upon us? When we look back at what this country was at its first establishment, and then look at it now. When we look at the lands then abounding in every element of fertility, but now washed away and barren wastes, we are ready to ask again, is this "*using this world as not abusing it.*" It is true that it was not known until recently that

rolling lands could be cultivated without wearing out, and *"the times of this ignorance may have winked at,"* but now that the important discovery is made, to disregard it, and pursue the old land-destroying system, converting fruitful fields into barren wastes, must be considered by every sober minded man not only impolitic, but actually criminal. Again, it argues but little sense of our obligation to posterity to ruin the country by improper modes of cultivation, leaving to those who are to succeed us, to reap the fruits of our folly—to cultivate lands worth fifteen or twenty dollars per acre, for a few years, and then leave them to our children hardly worth the tillage—who, by dint of labor and perseverance, must work twenty or thirty years to restore that fertility which we have destroyed in one-third of the time.

I have already made this article, I fear, too long. In my next I will endeavor to speak of the *science* of hill side ditching, the inclination of the ditches, the fall of the rows, &c., &c.

J. F. S.

BENTON, Sept. 12, 1853.

From the Southern Christian Advocate.

Green Okra, etc., in Winter.

1. Cut Okra (the pods in the same state as when gathered for present use) into slices, across the pod, half an inch thick. Spread them on a board, or string and hang them up in an airy place in the shade to dry. In a few days they will be ready to put up in clean paper bags for winter use. For soup they are as good as when fresh in Summer.

2. Gather Tomatoes when fully ripe, and in dry weather, not later than the end of August. The smaller sizes are best. Scald them in boiling water; then squeeze them slightly to get the water all out. Spread them on earthen dishes and set the dishes in a brick oven, after taking out the bread. Let them remain in till next morning, and then hang them in bags in a dry place for winter use. Soak in warm water a few hours before using, unless for soup, when the soaking is not necessary.

3. Lima Beans (or Sewee either) gathered green, as for present use as spread thinly over the floor of a garret or other airy room, and turned over once or twice while drying. This should be gathered younger rather than older for Summer use. Soak in warm water twelve hours before cooking.

4. Musk Melons which fail to come to perfection in the Fall, are generally regarded as worthless, cut in slices a quarter of an inch thick and fried just as the egg plant is, has been pronounced much preferable to that vegetable.

Horticultural.

Hints for the Month.

ORCHARD AND GARDEN.—There is little to be done in the orchard this month, except the gathering of such fruit as yet remains upon the trees.

Fruit intended for winter use should be carefully picked from the tree by hand and so packed in barrels as to prevent bruising in the slightest degree—*for bruised fruit will not keep anywhere*, and especially in so warm and moist a climate as ours.

After being thus carefully gathered and packed, the barrels should be securely headed up and placed upon the side in the most airy, cool and dry position the premises afford.

The above applies to apples only. Pears keep best in single layers upon shelves in a cool, dry and darkened room. To ripen them bring them into a warm, well lighted room a few days before wanted for use.

The cocoons in which that destructive pest, the caterpillar, has deposited its eggs, may be easily discovered after the fall of the leaf upon the smaller branches of fruit trees, from which they should be removed and *burned.*

Every preparation should now be made for transplanting fruit and other deciduous trees. Directions for doing this will be given next month. In the meantime every one who intends setting out fruit trees the present Fall or Winter should order them without delay. The earliest orders generally procure the best trees, and the sooner a tree is planted out after the fall of the leaf the better.

The following list embraces a few varieties, which may be relied on as the best for a succession in this climate.

APPLES.—Early Harvest, Red Astrichan, Sweet Bough, Red June, Bevan's Favorite, Porter Gravenstien, Horse Apple, Male Carle, Holland Pippin, (for cooking,) Hawley, Fall Pippin, Wine Sap, Esopus Spitzenberg, Swaar, Limber Twig, Gloria Mundi, (for cooking,) Granny Buff, Pryor's Red, Rawles' Janet.

PEARS.—Skinless, Jargonelle, St. Ghislain, Bartlett, Carolina Sugar, Duch. D'Angouleme, Heathcote, Vicar of Wakefield, (for cooking,) Winter Bell, (for cooking,) Winter Nelis.

PEACHES.—"Early Tillotsen," Early York, Cole's Early Red, Troth's do., Early Newington Free, Grasse Mignoum, Crawford's Early, Red and Yellow Rareripes, Early Royal George, Crawford's Late, Druid Hill, Ward's Late Free, Cox's October.

GARDEN.—This should be a busy month for the Southern Horticulturalist. The garden plat should be thickly covered with composted manure, or even with manure taken directly from the stables or cow lot, and ploughed or spaded in very deep immediately. Set out all the cabbage plants wanted for Winter use, and sow seeds of the early kinds to come in early in the Spring. Plant out onion sets, and sow seeds in well pulverized, deeply dug, rich soil. Continue to sow turnips, mustard, parsnips, as also radishes and lettuice. These last in beds which can be protected in the coldest weather.

J. A. & S. S. VIRGIN,

MACON, GA., AND MONTGOMERY. ALA.,

DEALERS IN


PIANOS,

HARPS,


GUITARS, STRINGS,

Sheet Music,

AND A

VARIETY OF MUSICAL MERCHANDISE,

GOLD AND SILVER WATCHES,

JEWELRY, SILVER AND PLATED WARE,

AND FANCY ARTICLES.

N. B.—Watches, Clocks, and Jewelry repaired in the best manner.

April 1, 1853-6t

For Sale,

A good Cotton Plantation.

THE subscriber offers for sale his valuable Cotton Plantation, lying on the waters of Line Creek, in Macon County, Ala., and containing **960 Acres.**—There are 600 acres cleared on the tract and in successful cultivation. All the open land is protected by *grade ditching*, and the rows *horizontalized*. The place is well watered and healthful: two good springs in the Plantation, and a never-failing well of water in the yard. Improvements, such as Dwelling House, Negro Cabins, Stables, with Gin House and Screw, &c., in good order.—A further description is deemed unnecessary, as any gentleman wishing to purchase such a place, will prefer examining for himself.

Terms will be made to suit the purchaser. Stock and provisions will be sold with the place, at reasonable rates.

August 1, 1853-3t T. P. G. BRUMBY.

NO. 1 SUPER-PHOSPHATE OF LIME.

THIS valuable fertilizer has been used for several years in England and other parts of Europe, and next to Guano, holds the highest rank in popularity, and the extent to which it is used among farmers. Its introduction in this country has been more recent; but the progress it has made in the estimation of the public has not been less marked or successful than abroad. It is now entensively used throughout the Northern States, after a full trial and investigation of its merits; and it is rapidly becoming, like its predecessor, Guano, a favorite manure at the South and West.

It is composed of crushed or ground bones, decomposed by the addition of about 1-5 their weight of sulphuric acid, diluted with water, to which is added a due proportion of guano and sulphate of ammonia. The latter is the active and one of the most efficient agents in the best Peruvian Guano.

It is suited to any soil in which there is not already a full supply of the phosphates, which is seldom the case. All crops are benefitted by its application.

For sale in large or small quantities, in bags of 150 lbs. each. No charge for packages. All bags will be branded "C. B. DeBurg, No. 1 Super-Phosphate of Lime."

For sale at R. L. ALLEN'S Agricultural Warehouse and Seed Store, 189 and 191 Water-street, New-York.

Sept. 1, 1853-2t

THE SOUTHERN CULTIVATOR, is published on the first of each month, at Augusta, Geo. D. LEE, M. D., Editor, and D. REDMOND, Assistant Editor. *Terms:* $1 a year, in advance.

Mississippi Nurseries,

LOCATED NEAR YAZOO CITY, MISS.

THE subscribers take great pleasure in announcing to their friends, and the public generally, that they have now on hand, and ready for sale, one of the choicest collections of **Fruit Trees** to be found any where in the South. Their assortment is very large and complete—the trees are healthy and well grown—and the prices as low as can possibly be afforded. The following are some of the leading articles with prices annexed:

Pears $1 each,....$80 per 100.		Apricots $1 each.	
Apples 25c. each, $20 " "		Nectarines 50c. "	
Peaches 25c. " $20 " "		Plums $1 "	
Strawberries, 50c. per doz.		Cherries $1 "	

All articles sent from the Nurseries are carefully labelled, securely packed, and delivered in Yazoo City free of charge. Orders to receive attention, must be accompanied by cash, or good N. Orleans, Vicksburg or Yazoo City reference, and addressed to the subscribers at Yazoo City, Miss.

N. B. Persons unacquainted with the different varieties of Fruits, would do well to state for what purpose the trees are wanted, and leave the selection to the proprietors.

Sept. 1, 1853-6m C. B. SWASEY & CO.

Yellow Clover,

FOR WINTER PASTURAGE.

THE subscriber having grown the Yellow Clover successfully upon his Farm, knows it to be the article represented above, which is just the thing Planters in the South need. The reduced rates at which the Seed are sold, is a sufficient guarantee that no humbug is intended.

These Seed are to be had at the Drug Store of B. R. JONES & CO. The clean Seed are sold at $1 per pint, enough for one acre. In the bur 50c. per peck.

Sept. 1, 1853-tf B. J. SMITH.

DAGUERREOTYPE EXCELSIOR.

C. BARNES has introduced a new and valuable improvement in his Daguerreian Art, called DAGUERREOTYPE EXCELSIOR. The style is *unique* and truly *beautiful*. The pictures are equal in tint and color to the Ivory Miniature Paintings.

(The above is his own invention.)

Mr. BARNES is able now, by his new Improvements, to produce most beautiful impressions in from two to five seconds sitting.

☞ His GALLERY is 48 Dauphin-street, Mobile.

Mobile, September 1, 1852-1y.

Saxon Merino Bucks.



THE subscriber has eight young Buck Lambs, of the above named fine breed of Sheep, and four of the same breed with a dash of the South Down. These Lambs are now four months old, of fine size, good condition and health. Gentlemen wishing to cross this fine variety of Sheep on their flocks, can have these at a small consideration above their market value for mutton. Price $10 each, deliverable at any time after the first day of September. If to be shipped, they will be delivered at Shorter's Depot, on the Montgomery and West Point Rail Road, in a good secure cage for which $1 will be required.

N. B. CLOUD.

Contents of this Number.

The Cotton Plant..... 289
The Turnip Plant..... 292
Science and Agriculture..... 294
Action of Guano..... 295
The Beautiful in Ground..... 297
Apple Tree Caterpillars..... 298
Madder and Indigo..... 299
Whiskey for Snake Bite..... 300
Vegetable Productions of Various Climes..... 300
Basket Willow..... 301
Remedy for Yellow Fever..... 302
Oyster Shells for Peach Trees..... 302
The Caterpillar in Cotton..... 303
Winter Food for Stock..... 303
It Pays to Use Manure..... 303
Fruit Trees..... 304
How to Preserve Manure..... 304
New Cotton Press..... 304
EDITORIAL—
Work for the Month..... 305
Agricultural Association..... 305
Prospectus of our Second Volume for 1854..... 306
The Right Spirit to make the South Independent..... 306
Discoveries in Animal Physiology, &c 307
The Comet..... 307
Agricultural Fair—Robinson's Springs..... 307
Yellow Clover..... 307
Montgomery County Fair..... 308
PLANTATION ECONOMY—
Cotton Culture, No. 1 and No. 2..... 303
Impertant to Cotton Planters..... 309
Cotton—Its Prospects, &c..... 310
Green Sand—Quantitative Analysis..... 311
Explanation of Prairie Formations..... 312
Prairie Soils of Alabama—New Theory..... 313
Hill Side Ditching and Horizontal Rows—No. 1... 316
Guano—A Recent Discovery..... 316
Green Okra, etc., in Winter..... 318
HORTICULTURAL—
Hints for the Month—Orchard and Garden..... 318

GRAPES FOR THE SOUTH.

THE Subscriber offers for sale about 30 dozen fine, well rooted skuppernong grape vines of two years growth. These vines have been propagated by layers from a vine direct from Skuppernong river, of superior quality and unrivaled by any vine south of Tar river. These vines are warranted to bear the third year after being put out, and for 99 years in succession thereafter.

They can be had by application to me at La Place, or in the city of Montgomery at $5 per dozen, well put up, and securely sent to any part of the country.

oct 1 DR. CLOUD.



COXE & HUTCHINGS,

IMPORTERS AND DEALERS IN

Foreign and Domestic Medicines,

CHOICE WINES AND LIQUORS,

Perfumery, Brushes, Paints, Oils, and Window Glass,

GARDEN AND FIELD SEEDS,

GUANO AND OTHER FERTILIZERS, &c.

MONTGOMERY.

February 1st, 1853.

T. R. CRAWFORD,

NO. 15 DAUPHIN-ST.,

MOBILE, ALABAMA,

WHOLESALE AND RETAIL DEALER IN

Hats, Caps, Boots, Shoes, Bonnets,

UMBRELLAS AND ARTIFICIAL FLOWERS.

HAS one of the largest and best selected Stocks of the above-named articles, to be found in the City of Mobile, which he offers for sale at *Low Prices*, and on accommodating terms.

☞ Also, a very large Stock of NEGRO SHOES, of superior quality, selected especially for the Merchants' and Planters' trade.

Mobile, September 1-6t.

THE **SOUTHERN LADIES' BOOK**, published in New Orleans, devoted to polite literature, and edited by Mrs. L. VIRGINIA FRENCH, at $3 per annum, invariably in advance. Emphaticalty the Book for Southern Ladies.

ALABAMA JOURNAL JOB OFFICE, PRINT.



A Monthly Journal, devoted to improved Plantation Economy, Manufactures, and Mechanic Arts

Vol. I. MONTGOMERY, NOVEMBER, 1853. No. 11.

PROSPECTUS.

The American Cotton Planter

FOR 1854.

THE Second Volume of the AMERICAN COTTON PLANTER will commence promptly, and the first number be ready for delivery to subscribers, by the first day of January, 1854.

The very high favor in which the work has been received by the press of the country, and the extent of its circulation, for the first year, among the practical, intelligent planters and mechanics of the Cotton States, render an extended repetition of its merits unnecessary here. Suffice it to say that the Editor and Publishers have determined that the COTTON PLANTER shall be second to no periodical of the kind published in the United States, in no particular.

As heretofore it will be printed on book paper, purely white, made expressly for the work at the Rock Island Factory, with new fair type, on an improved Adams Power Press, securely stitched and neatly covered, thus protecting it entirely, into the hands of subscribers.

One fourth of each number shall be devoted invariably to the science of Agriculture, Geology, and Analysis, with the principles and theory of soils and manures.—The balance of the work will be devoted to practical Plantation Economy and Horticulture.

Our Horticultural department will be sustained by a gentleman of thorough practical experience.

In short we assure our friends and the friends of improvement in the Agricultural and other industrial pursuits of the Planting or Slaveholding States, that neither pains, industry, or expense, shall be spared to make the AMERICAN COTTON PLANTER the true exponent of the Planting interest of the country.

TERMS.

1 Copy.....$1 in advance.
6 Copies..... 5 " "
12 " .....10 " "

To Clubs, or Agricultural Societies, 100 copies for $75 to one address.

All subscriptions must commence with the volume, and the money must *invariably* accompany the order.

☞ Address, &c., on title page of cover.

From the Patent Office Reports.

Manures.

Every substance which has been used to improve the natural soil, or to restore to it the fertility which is diminished by the crops annually carried away, has been included in the name of manure. It is well known to all practical agriculturalists that the texture of the soil, and the proportions of the earths of which it is composed, are the first and most important conditions of its productive powers. Where there is a good natural loam, which retains moisture without being overcharged with wet, and permits the influence of the atmosphere to pervade it, the crops cannot fail to be more certain and remunerating than in loose sand, or tenacious clays; but at the same time it is equally true that the best texture of soil will not produce good crops for any length of time without the help of manure to recruit the loss produced by vegetation.

The methods employed in the cultivation of land are different in every country; and when we inquire the cause of these differences, we receive the answer that they depend upon circumstances. No answer could show ignorance more plainly, since few have ever yet devoted themselves to ascertain what these circumstances are. Thus, also, when we inquire in what manner manure acts, we are answered that the excrements of men and animals are supposed to contain an incomprehensible something which assists in the nutrition of plants, and increases their size. This opinion is often embraced without even an attempt being made to discover the component parts of manure, or to become acquainted with its nature.

In addition to the general conditions, such as heat, light, moisture, and the component parts of the atmosphere, which are necessary for the growth

of all plants, certain substances are found to exercise a peculiar influence on the development of particular plants. These substances either are already contained in the soil, or are supplied to it in the form of substances known under the general name of manure. But what does the soil contain, and what are the components of the substances used as manure? Until these points are determined, a rational system of agriculture cannot exist. The power and knowledge of the physiologist, agriculturalist, and chemist must be united for the complete solution of these questions.

The general object of agriculture is to produce, in the most advantageous manner, certain qualities, or a maximum size, in certain parts or organs of particular plants. Now this object can be attained only by the application of those substances which we know to be indispensable to the development of these parts or organs, or by supplying the conditions necessary to the production of the qualities desired.

The rules of a rational system of agriculture should enable us, therefore, to give to each plant that which it requires for the attainment of the object in view.

As the composition of soils forms an important feature in the profession of agriculture, it will be our duty to explain, as briefly as possible, some of those which have the most distinct characters from their connections with different geological formations.

There are various modes of distinguishing soils without entering into a minute analysis of their component parts. The simplest and most natural is, to compare their texture, the size and form of the visible particles of which they are composed, and to trace the probable source of their original formation from the minerals which are found around or below them. The science of geology is of great utility in enabling us to compare different soils and ascertain their composition.

The soils which are immediately derived from those rocks, in which no traces of organic remains are to be found, consist either of visible fragments of hard minerals, which are not affected by exposure to air or water, or of minuter particles of the same, of which the shape is not readily distinguished by the naked eye. When they are altogether composed of visible particles and stones, the water readily passes through them; and unless they are kept continually moist by a regular irrigation, without any stagnation of the water, they are absolutely incapable of sustaining vegetation.

It is seldom, however, that any gravel or sand does not contain some portion of earth or other matter, of which the particles become invisible when diffused through water, and to which we will here give the general name of impalpable substance. A certain portion of this finer part of the soil, and its due admixture with the coarser, especially where there is some regular gradation of size, and no stones of too large dimensions to obstruct the instruments of tillage, may be considered as essential to fertility.

The soils which have been formed from the disintegration and decomposition of the primitive rocks, such as granite, basalt, or limestone, and those which contain all these minerals minutely divided and intimately mixed, are always naturally fertile and soon enriched by cultivation. The hard particles of quartz maintain a certain porosity in the soil, which allows air and moisture to circulate, while the alumina prevents its too rapid evaporation. The silicate of potash is highly favorable to the vegetation of those plants which contain silica in their stems; in fact silica is present in the ashes of nearly all plants, having entered the plants by means of alkalies.

The primitive limestone, which is very hard, is yet gradually decomposed by the action of air and water, being in a very small degree soluble in the latter. The water which flows through these rocks is soon saturated; but when it springs out and comes to the light, the carbonate of lime is deposited by the evaporation of the water; and if this meets with the clay which results from the decomposition of the slate, it forms a marl, which, naturally or artificially added to silicious sand, forms the basis of a very good soil, particularly well adapted to pasture.

The soils, which have evidently been formed from the rocks, which are supposed to be of secondary formation, are fertile according to the proportion of the earths of these rocks which they contain. It is of these, chiefly, that those loose, sandy soils are formed, of which the particles appear as distinct crystals, easily distinguishable with the aid of a lens, or even by the naked eye. Air and water have been the chief agents in the decomposition of those secondary rocks called sand stones, and agitation in water has washed from them the finer portions which have remained suspended. The immense sandy plains, which are for the most part barren, have probably once been the shores of the sea, from which the waves have washed all that portion which was impalpable and easily suspended in water, depositing this in the depths, which, by some convulsion in nature, may some time or other be raised above the level of the waters, and form hills or plains of clay.

Argillaceous earth exists, in some proportion, in almost every rock. Some of the hardest gems are chiefly composed of alumina. It has the property, when mixed with other substances, as silica or lime, of fusing into a stone of great hardness and insolubility. In this state, its effect on the soil is not to be distinguished from that of silica; and by burning common clay, or clay mixed with carbonate of lime, a sandy substance is produced, resembling burnt brick, which tends greatly to improve the texture of those clays which contain little or no sand in their composition. It must be

remembered that the stiffest clays contain a large portion of silica in an impalpable state; but this, instead of correcting their impermeable and plastic nature, rather adds to it. It is only palpable sand, which, with clay, forms what is commonly called loam, and which, when the sand is in due proportion with a mixture of organic matter, forms the richest and most easily cultivated soils. Some of the rocks of secondary formation contain a considerable portion of alumina and lime; and when these earths meet with crystalized sand, a compound, or rather a mixture, is formed which has all the requisite qualities, as to texture, to produce the most fertile loams. The only deficiency is organic matter, but this is so readily accumulated wherever vegetation is established, or can be so easily added artificially, that these loams may be always looked upon as the most favorable soils for agricultural operations; and if a considerable depth of loam is found, which neither retains water too long nor allows it to percolate too rapidly, it may be looked upon as a soil eminently capable of the highest degree of cultivation. It is known that the aluminous minerals are the most widely diffused on the surface of the earth; and all fertile soils, or soils capable of culture, contain alumina as an invariable constituent. There must, therefore, be something in aluminous earth which enables it to exercise an influence on the life of plants, and to assist in their development. The property on which this depends is that of its invariably containing potash and soda.

It will be seen that each distinct formation gives rise to a great variety of fertility, even where the basis remains the same; but it is of great importance to the farmer to ascertain the general nature of the rocks and strata on which his farm lies. In these soils which we have mentioned, no notice has been taken of organic matter, because this does not seem in any way connected with their formation. The primary strata are distinguished by having no traces of organic remains in their composition. It is in the tertiary strata, especially those which have been formed by the destruction of animal and vegetable substances, that organic matter becomes a peculiar object of attention; and it is doubtless from this reason alone that alluvial soils of later date are found so highly fertile. The alluvial soils formed by the deposit of a variety of earths in a state of great division, and mixed with a portion of organic matter, form by far the most productive lands. They will bear crop after crop with little or no addition of manure. These soils are found along the course of rivers which traverse extensive plains, and which have such a current as to keep very fine earth suspended by a gentle, yet constant agitation, but not sufficiently rapid to carry along with it coarse gravel or sand. Wherever there is an obstruction to the current, and an eddy is formed, there the soil is deposited in the form of mud, and, gradually accumulating, forms those alluvial soils which are so remarkable for their fertility. In these soils the impalpable matter greatly predominates; but the intimate mixture of the earths with organic matter, in a state which has been called *humus*, prevents their consolidating into a stiff clay, and the gases which are continually evolved from the organic matter, keep the pores open, and give scope to the growth and nourishment of the root.

Organic matter is, no doubt, essential to great fertility in a soil, but some soils require more of it than others. *Humus*, which is the form which organic matter naturally comes to by slow decomposition in the earth, gives out certain elements which the roots can take up in their nascent state, and from which they obtain the carbon so abundant in all vegetable productions. But organic matter, in every stage of its spontaneous decomposition, keeps the pores of the soil open, and admits, even if it does not attract, air and moisture to the fibres of the roots.

Professor Liebig, however, takes a different view of this subject. He says: "Land of the greatest fertility contains argillaceous earths, and other disintegrated minerals with chalk and sand, in such a proportion as to give free access to air and moisture. The land in the vicinity of Mount Vesuvius may be considered as the type of a fertile soil, and its fertility is greater or less in different parts, according to the proportion of clay or sand which it contains.

"The soil which is formed by the disintegration of lava cannot possibly, on account of its origin, contain the smallest trace of vegetable matter; and yet it is well known that when the volcanic ashes have been exposed for some time to the influence of air and moisture, a soil is gradually formed in which all kinds of plants grow with the greatest luxuriance.

This fertility is owing to the alkalies which are contained in the lava, and which, by exposure to the weather, are rendered capable of being absorbed by plants. Thousand of years have been necessary to convert stones and rocks into the soil of arable land, and thousands of years more will be required for their perfect reduction—that is, for the complete exhaustion of their alkalies.

Air, water, and the change of temperature, prepare the different species of rock for yielding to plants the alkalies which they contain. A soil which has been exposed for centuries to all the influences which affect the disintegration of rocks, but from which the alkalies have not been removed, will be able to afford the means of nourishment to those vegetables which require alkalies for their growth during many years; but it must gradually become exhausted, unless those alkalies which have been removed are again replaced; a period, therefore, will arrive when it will be necessary to expose it from time to time to a further

disintegration, in order to obtain a new supply of soluble alkalies; for, small as is the quantity of alkali which plants require, it is nevertheless quite indispensable for their perfect development.

The first colonists of Virginia found a country, the soil of which was similar to that just mentioned; harvests of wheat and tobacco were obtained for a century from one and the same field without the aid of manure; but now whole districts are converted into unfruitful pasture land, which, without manure, produces neither wheat nor tobacco. From every acre of this land there were removed, in the space of one hundred years, 12,000 pounds of alkalies in leaves, grain and straw. It became unfruitful, therefore, because it was deprived of every particle of alkali which had been reduced to a soluble state, and because that which was rendered soluble again in the space of one year was not sufficient to satisfy the demands of the plants. It is the greatest possible mistake to suppose that the temporary diminution of fertility in a soil is owing to the loss of *humus;* it is the mere consequence of the exhaustion of the alkalies.

Let us look at the condition of the country around Naples, which is famed for its fruitful corn land. The farms and villages are situated from eighteen to twenty-four miles distant from each other, and between them there are no roads, and consequently no transportation of manure. Now, grain has been cultivated on this land for thousands of years, without any part of that which is annually removed from the soil being artificially restored to it. How can any influence be ascribed to *humus* under such circumstances, when it is not even known whether *humus* was ever contained in the soil?

The method of culture in that district explains the permanent fertility. A field is cultivated once every three years, and is in the intervals allowed to serve as a sparing pasture for cattle. The soil experiences no change in the two years during which it lies fallow, further than that it is exposed to the influence of the weather, by which a fresh portion of the alkalies contained in it are again set free or rendered soluble. The animals fed on these fields yield nothing to these soils which they did not formerly possess. The weeds upon which they live spring from the soil, and that which they return to it as excrement must always be less than that which they extract. The fields, therefore, can have gained nothing from the mere feeding of cattle upon them; on the contrary, the soil must have lost some of its constituents.

Experience has shown, in agriculture, that wheat should not be cultivated after wheat on the same soil, for it belongs, with tobacco, to the plants which exhaust a soil. But if the humus of a soil gives it the power of productng grain, how happens it that wheat does not thrive in many parts of Brasil, where the soils are particularly rich in this substance.

The cause is, that the strength of the stalk is due to silicate of potash, and that the grain requires phosphate of magnesia, neither of which substances a soil of humus can afford, since it does not contain them. The plant may, indeed, under such circumstances, become an herb, but will not bear fruit.

Potash is not the only substance necessary for the existence of most plants; indeed the potash may be replaced in many cases by soda, lime, or magnesia. But other substances besides alkalies are required to sustain the life of plants. Phosphoric acid has been found in the ashes of all plants hitherto examined, and always in combination with alkalies or alkaline earths. Most seeds contain certain quantities of phosphates. In the seeds of different kinds of corn, particularly, there is abundance of phosphate of magnesia.

The soil in which plants grow furnishes them with phosphoric acid, and they in turn yield it to animals, to be used in the formation of their bones, and of those constituents of the brain which contain phosphorus. Much more phosphorus is thus afforded to the body than it requires when flesh, bread, fruit, and husks of grain are used for food; and this excess is eliminated in the urine and the solid excrements.

Although by artificial cultivation the quantity of humus in a soil may be increased almost to any degree, still in spite of this, there cannot be the slightest doubt that a soil must gradually lose those of its constituents which are removed in the seeds, roots, and leaves of the plants raised upon it. The fertility of a soil cannot remain unimpaired, unless we replace in it all those substances of which it has been thus deprived. Now this can only be done by manure.

The manures thus used are divided into two classes—

1. Animal or natural manures.
2. Chemical or artificial manures.

Among the most important of the animal manures are the excrements of animals. The peculiar property of earth in absorbing putrid effluvia, and removing disagreeable smells, appears an indication of nature, to lead us to bury putrid animal substances, of which the excrements and dead carcasses of animals are the most numerous and obvious. It would require no length of experience to show that wherever this is done, vegetation is more vigorous. There is, therefore, another motive for burying manure than merely to get rid of a disagreeable substance. From the most ancient times, of which there are any records, the manuring of a field has been an important part of cultivation.

We may now inquire whether the excrements of animals are all of a like nature and power, and whether they in every case administer to the necessities of a plant by an identical mode of action. These points may easily be determined by ascertaining the composition of the animal excrements,

because we shall thus learn what substances a soil really receives by their means. According to the common view, the action of solid animal excrements depends on the decaying organic matters which replace the humus, and on the presence of certain compounds of nitrogen, which are supposed to be assimilated by plants, and employed in the production of gleuten and other azotized substances. But this view requires further confirmation with respect to the solid excrements of animals, for they contain so small a proportion of nitrogen that they cannot, possibly, by means of it, exercise any influence upon vegetation.

We may form a tolerably correct idea of the chemical nature of the animal excrements, without further examination, by comparing the excrements of a dog with its food. When a dog is fed with flesh and bones, both of which consist in great part of organic substances containing nitrogen, a moist white excrement is produced, which crumbles gradually to a dry powder in the air. This excrement consists of the phosphate of lime of the bones, and contains scarcely 1-100 part of its weight of foreign organic substances. The whole process of nutrition of an animal consists in the progressive extraction of all the nitrogen from the food, so that the quantity of this element found in the excrements must always be less than that contained in the nutriment.

When horse excrement is treated with water, a portion of it, to the amount of three or three and a half per cent., is dissolved, and the water is colored yellow. The solution is found to contain phosphate of magnesia and salts of soda, besides small quantities of organic matters. The portion of the excrement undissolved by the water yields to alcohol a resinous substance, possessing all the characters of gall, which has undergone some change; while the residue possesses the properties of saw-dust, from which all soluble matter has been extracted by water and burns without any smell. One hundred parts of the fresh excrement of a horse, being dried at 212 degs. F., leave from 25 to 31 parts of solid substances, and contain accordingly 69 to 75 parts of water. From the dried excrements, we obtain variable quantities of salt and earthy matters, according to the nature of the food which has been taken by the animal. It results, then, that with from 3,600 to 4,000 pounds of fresh horse manure, corresponding to 100 pounds of dry manure, we place on the land from 2,484 to 3,000 pounds of water, and from 730 to 800 pounds of vegetable matter, and also from 100 to 270 pounds of salt and other inorganic substances.

The latter are evidently the substances to which our attention should be directed, for they are the same which formed the component parts of the hay, straw, and oats with which the horse was fed. Their principal constituents are the phosphates of lime and magnesia, carbonate of lime, and silicate of potash; the first three of these preponderating in grains, the latter in hay. Thus in 1,000 pounds of horse manure, we present to a field the inorganic substances contoined in 6,000 pounds of hay, or 8,300 pounds of oats.

The peculiar action, then, of the solid excrements is limited to their inorganic constituents, which thus restore to a soil that which is removed in the form of roots or grain. When we treat land with the manure of the cow or sheep, we supply it with silicate of potash and some salts of phosphoric acid; and when enriched with the manure of the horse, we supply it with silicate of potash and phosphate of magnesia. In the straw which has served for a litter, we add a further quantity of silicate of potash and phosphates; which, if the straw be putrified, are in exactly the same condition in which they were before being assimilated. It is evident, therefore, that the soil of a field will alter but little if we collect and distribute the manure carefully. A certain portion of the phosphate, however, must be lost every year, being removed from the land with the grain and cattle; and this portion will accumulate in the neighborhood of large towns. The loss thus suffered must be compensated for in a well managed farm; and this is partly done by allowing the field to lie in grass. It is considered that, for every 100 acres of corn land, there should be 20 acres of pasture land, which produce annually, on an average, 5,000 pounds of hay. Then, assuming that the ashes of the excrements of the animals fed with this hay amount to nearly seven per cent., 341 pounds of the silicate of lime, and phosphates of magnesia and lime, must be yielded by these excrements, and will, in a certain degree, compensate for the loss which the land had sustained.

(To be continued.)

COOKING EGG PLANTS.—As we shall now, in the course of a few weeks, have this excellent vegetable in season, we publish in advance the following mode of cooking the egg plant in the South, which we find in a monthly agricultural publication called the "Soil of the South."

"Are you fond of sweet oysters? If so, we will give you a dish equal to the Mobile Bay oysters. First, peal the fruit, and slice it thin, boil it in salt and water until thoroughly done. Now drain off the water, cover it with sweet milk, crumble in some toasted bread and crackers, with pepper, and such other condiments as the taste may dictate. Now break in two or three eggs, and as it simmers over the fire, stir all together; as soon as the egg begins to harden the metamorphosis is complete; the oysters are ready for the table.

To fry the egg plant, they should be first peeled and parboiled, then dipped into batter and dropped into boiling lard—taking care to season them properly before frying.

From the Southern Cultivator.

Wheat Culture at the South.

In studying the agricultural statistics of the planting States, we have been surprised that South Carolina grows more than three times as much wheat as Alabama, and six times as much as Mississippi. The returns from these States at the last census are 1,066,277 bushels in South Carolina; 294,044 in Alabama; and 137,990 in Mississippi. Georgia grows but a few bushels more than the comparatively small State of South Carolina; her returns being 1,088,534 bushels. Neither of these States produce so much wheat as a single county (Monroe) in the Valley of the Genesee. Few men have had better opportunities for studying both Northern and Southern wheat culture than the writer; and there will be offered only practical suggestions suited to both sections.

At the South, farmers are everywhere too careless in the selection and preparation of seed wheat. We were particularly anxious to sow clean seed last Autumn, and our man bought the best he could find; but when the crop was harvested, it turned out, perhaps, a bushel of cockle per acre. The small black seed of this weed is one of the least injurious to the wheat when taken to the miller, for his best screens and sieves separate it before grinding. But it is quite as easy to grow a bushel of pure wheat as one of cockle, which is worthless. Garlic, which abounds in many parts of Maryland and Virginia, is one of the worst pests in wheat that we have ever met with in any country. Before the grain is cut for seed, the farmer should take one or two careful hands with him, and pull out every stem and head of garlic, cockle, cheat or chess, and all other injurious weeds. Where this is not done, the bundles of wheat should be untied before they are threshed, and carefully hand-picked, that one may be sure of sowing nothing but clean wheat. In addition to pure seed, wheat growers should have the land on which the seed is to be sown, both free from the seeds of all troublesome weeds, and thoroughly cultivated. It is even more important that a crop of wheat shall be clean than a crop of cotton. The latter receives the benefit of the sun, and the full strength of the soil, by the careful and timely use of the plow and the hoe, aided sometimes by the harrow and cultivator. Many suppose that it is nearly impossible to have land at once fertile and free from weeds. It must be confessed that a rich soil is infinitely more likely to produce a luxuriant growth of undesirable plants in wheat than a poor soil. By rotting in the ground, weeds and grass add to its mould, and ability to grow wheat, corn, or other crops. One great advantage in plowing land six, eight, or ten weeks before seeding, and of repeating the operation several times, is the making of the seeds of weeds germinate, and killing the young weeds before the wheat is sown. Where the soil is comparatively sterile and no stable manure is used, these repeated plowings may not be necessary. All that we contend for is that the land shall be clean and thoroughly tilled, and the wheat sown perfectly pure. It is important that every one should have a correct standard to go by, even if he fail to come quite up to it.

The quantity of seed that ought to be put on an acre depends mainly on the strength of the soil, but partly on the size of the wheat grains. If the seed is large, two bushels will not furnish so many plants to the acre as one bushel of quite small seed. This fact will be seen by counting the grains in an ounce or half ounce of both large and small wheat. On land which is not first rate, we believe in thin seeding; for the numerous roots of this cereal, like those of corn, extend a considerable distance for their food. Hence in nine cases out of ten, deep tillage, (subsoiling,) adds much to the harvest. While we leave the quantity of seed to be sown per acre entirely to each farmer, we beg to suggest that rolling the ground after the seed is covered, is generally very useful. The best Peruvian guano has been selling in Washington D. C. at $44 per ton; and at this time it ought to yield a profit when applied to the production of the crop under consideration. We know a wheat grower in the State of Delaware who purchases $3000 worth of guano a year. It pays only a moderate profit. We shall sow no wheat this fall, believing it, near cities, more profitable to sow timothy seed instead of wheat, and raise grass for hay. Wheat is itself a grass not less than timothy, and the latter, if treated as well as wheat ought to be, will yield two tons of good hay per acre. We hope to obtain, ultimately, four tons of two cuttings, but may not get so much. As a general rule, it is better to sow wheat early than late. It gives the young plants a chance to tiller somewhat before cold weather arrests their growth. They attain considerable size, acquire strength to withstand the frosts of winter, by which the ground is often raised abruptly, and the roots of wheat are badly broken. A great deal of wheat is lost by winter-killing, especially on clay soils and in damp places. Every wheat grower knows the importance of draining off all surface water from wheat fields: but every one is far from doing so. Be careful to open all the needful ditches and smaller water courses; and on level compact soil let the ground be thrown up into beds, a foot or more high in the centre, and handsomely graded down to water courses between the beds.

One of the principal advantages of drilling in seed wheat is the evenness with which the seed is covered. If covered with a harrow or plow, some grains are buried much deeper than others; and the plants grow and ripen unevenly. Every seed should be covered at the same depth—deeper on light sandy soils than on clayey, or heavy lands.

Where one has suitable ground and good luck, wheat is a pleasant staple to cultivate, and profitable withal. It is, however, liable to many calamities; particularly to the attack of insects, both in the field and granary; to rust, smut and blight. These cannot always be avoided by the most skillful. Smut is generally prevented by washing seed wheat in a strong brine made of common salt, and then drying it in recently slaked lime. Wheat should never be in brine over four or five hours, for the salt will kill some of the germs.

After wheat is cut, it is the greatest folly that a farmer can commit to let it stand out in small stacks in the field for weeks, and sometimes months. Better clear off a hard, smooth spot, and thresh out the crop at once, so soon as it is dry enough, where one has no barn for storing wheat. Early new wheat always sells well to millers, or in flour, if one has it ground on his own account. Where it is kept in bins it should be well exposed to the hot sun in the middle of the day. After the crop is made, a great deal of wheat is spoiled, or wasted in various ways. This loss is generally due to carelessness. Of all men, the husbandmen should be careful to avoid the thousand and one little losses to which his property is peculiarly exposed. A lecture on this subject would not come amiss on many a plantation. We have often grieved, silently, to see wheat straw wasted—a practice more common at the South than at the North. Northern farmers err more in growing too much wheat for the manure they make, just as too many over-crop with cotton where that is the staple. The cardinal principle of making perfect restitution to the land is nowhere fully recognized and reduced to practice. So soon as this compensating idea takes possession of the public mind, farm economy will be studied as a science. Then the manure that may be obtained from wheat and its straw will all be saved to fertilize the land that most needs it. Wheat culture will be greatly improved in twenty years. The best manure for this cereal ought to be found in that length of time. We might pronounce guano the cheapest and best if sold at $20 a ton. Above that price, our impression is that one had better grow peas, corn, barley and rye to feed hogs, make meat, and cheap manure. Indeed, we are inclined to believe that we can buy corn to feed hogs and sell pork or bacon for all that the corn costs, and obtain all fertilizers derived from the corn as profit. In some way, the good cultivator needs a full supply of the raw material for making thirty bushels of wheat per acre, to render the business truly profitable. Manure is in much greater demand among the wheat growers of Western New York now than it was ten years ago; and to this complection all must come, sooner or later. The last telegraph account from New Orleans informs us that the yellow fever is taking off 429 persons a week. Had all the elements of human food which have accumulated and rotted in that city in the last twelve months been dedorized, and sent into the country to produce new crops, this pestilence would have been prevented, and thousands of acres made rich and doubly remunerative.

While American farmers are killing their lands from the want of manure, American merchants and mechanics are killing themselves and their families in cities with an excess of it. Neither party has the power to annihilate an atom of fertility; while both co-operate to desolate the earth and destroy its inhabitants by pestilence. When will the great truth be recognized, that it is alike the duty of all that eat bread, whether in town or country, to feed the land that feeds them? All animals give back in soil an exact equivalent of the food consumed. If such were not the law of Nature, all animals must, from necessity, impoverish the earth; which, continued a few centuries, would make all islands and continents barren deserts. This law of indispensable compensation, Americans habitually violate —not from necessity, but choice.

Wheat culture at the South, and everywhere, greatly needs the assistance of those that dwell in cities and villages. When man shall be so far enlightened and harmonized as to permit no animal or vegetable matter to decay in cities, and farmers permit nothing of the kind to be wasted on their farms, the raw material for the cheap production of grain and cotton will be placed within the reach of all. Manure enough to yield two or three barrels of flour can be put into a flour barrel, and railroads would gladly transport highly concentrated fertilizers, like guano, into the interior. Such concentrated manure is not now made in cities, because human excrements seem to be all needed for breeding pestilence! So feeble are the admonitions of science, so slow the progress of civilization, in the last half of the nineteenth century. We still insist on the perfect truthfulness of the statement that the farming lands of the United States have been damaged more in the last twelve months by tillage and the removal of crops, than in any previous twelve months since the continent was discovered. By a policy as suicidal as it is unnecessary, every State in the Empire conceals from the public the annual agricultural statistics which would show what the soil under cultivation loses, and what it gains in fertility, from year to year. It need not take longer than one or two decades to demonstrate approximately how much of the mould and minerals at and near the surface of the earth is consumed in producing twenty or thirty bushels of wheat per acre. Both the art and the science of wheat culture demand the critical study of the philosophy of tillage, the profound consideration of the things really consumed to form good crops, and the most economical sources from which the raw material of grain can be derived? Who will aid us in throwing light on this

subject? Who will devote time, head and heart to the great work of civilizing the filthy inhabitants of American cities and villagss, who rob the soil of its elements of fruitfulness, and retain within their limits oceans of the best manure, which is so much needed in the country, and apparently for the express purpose of creating pestilence. In the order of Providence it is the mission of agriculture and agriculturalists to civilize and harmonize mankind. Slow as you move, brother farmer, this is your mission. D. LEE.

Recipe for washing and making Soap.

1st. On the night preceding the day intended to be set apart as wash-day, have all your cloths, white and colored, coarse and fine, put in tubs of clear water (we have one that holds sixty gallons, got for the express purpose of boiling all at once,) fill it full of water, and raise the water to boiling heat, after which put in a vessel of the size of the one we use, two teaspoons full of Sal Soda, one quart of Soft Soap, and one quart of Lime Water, made by pouring three gallons of water on one quart of lime the night previous, so that it may have had time to settle, and in proportion, if similar vessels are used; stir the water and get the sal soda, soap, and lime water, well mixed up, then put in your clothes, boil rapidly one hour and the work is done. Take them out and rinse well, rubbing slightly, as is usual in rinsing. Now pass no judgment, friends, until you have tried it. The same lime water may be kept until it is all consumed.

The receipt would be worth one thousand dollars in the hands of a selfish person, and the world would have to untie the purse string to get it, but here it is, free gratis for nothing, and I want the world to understand distinctly, that I shall have no communication with any body who wears dirty clothes after this—see if I do.

FOR MAKING THE SOAP.

Take six pounds of Potash,	75
Take four pounds of Lard,	50
Take one-fourth pound of Rosin,	25
All amounting to,	$1,50

Beat up the rosin, mix all together well, and set aside for five days, then put the whole into a ten gallon cask of warm water, and stir twice a day for ten days, at the expiration of which time, or sooner, you will have one hundred pounds of excellent soap for $1,50.

OGLETHORPE COUNTY.

From the American Artizan.

AMERICAN INSTITUTE.

FARMER'S CLUB.

Soiling of Cattle, and the best Plants for it.

Thomas Bell, of Morrisania, who has had very long and extensive experience in this business, was invited to give his opinion; and he said he had been engaged in agricultural pursuits, especially with cattle, for thirty-five years. I was soiling cattle in Scotland when I left it. I was supplying my cattle in that way the year round with grass, roots, &c. Much depends upon the character of the land we have to deal with. On rocky, uneven, mountainous grounds, we are compelled to graze cattle.

I have soiled from one hundred to one hundred and fifty head on four hundred acres, at Fordham, near this city. I set aside ten acres of the best land, ploughed not less than eight inches deep. Others may go deeper than that, and I shall approve it. I sowed Indian corn on it broadcast. I manured it with twenty-five cart loads an acre of my barn-yard manure in April, and when spread, it covered the whole surface. I ploughed it all in. That field had produced a crop of potatoes the year before. I took yellow Northern corn and sowed 4 bushels of it broadcast. On one acre, on the 1st of May, I sowed it, in going three times over the field, up and down. I then ploughed the field with my one-horse plough, which I shall call my *corn-plough*, about *four inches deep*. I then run a light roller over the field.

On the 10th of May I served one acre more in the same way. On the 20th of May another acre in the same way. On the 30th of May another—that made four sowings of corn in May.

On the 10th of June one acre more in same way, and one acre each in the same style on the 20th and 30th of June.

On the 10th, 20th and 30th of July each an acre in the some way.

On the 15th of July I commenced with the 1st of May acre, on which the corn averaged about 4 feet high, and in silk. I cut daily all that was wanted by my cattle, (one hundred of them,) and it lasted till the 15th of August. I gave meal along with the corn stalks. The soiling yard was about an acre in size. The cattle had free access to pure wholesome water just as much as they pleased. They went in and out of the adjoining stables, and that exercise seemed to be as much as they wanted, for they were perfectly healthy.

From the 15th of August to the 25th, the corn cut was of a stronger growth than the first. My hundred head were kept three months in this way. I saved much in the article of manure. If I had made tanks to save all the urine of my cattle I should have made more profit. This way of soiling renders interior fences unnecessary on a farm, and it is a large expense saved. On our

farms in England we sprinkle the manure over the growing crop with a tin sprinkler, like those with which we here water the streets. That would not answer in a dry time—it would prove too strong for the crop. I can get as much milk by pasturing as by soiling. The corn feed made the richest milk, and some say the richest butter.

I sent daily to market from one thousand to twelve hundred quarts of milk. Sometimes my number of cows was one hundred and fifty. The old Shakeress cow is still alive; she is about 18 years old. You have heard me say how I came by her. I repeat it. One day I met with a Shaking Quaker from Lebanon, who said to me, "Friend Bell, do'st thee want a good cow?" I said "Yes." "Well," says the Shaker, "I have a good one for thee, if thou wilt give me sixty dollars for her." "That's a high price," said I. "Well," replied the Shaker, "she will give thee a bushel of milk a day," (thirty-two quarts.) I gave sixty dollars and took the Shakeress, who sometimes gave me thirty-two quarts a day, and the average for a whole year fifteen quarts a day. She paid me well. I had another, which some of the members present saw on my farm—one I called the Old Judge. She was American with a cross of the Devon. She never gave me more than thirty quarts a day, but she gave it longer. My experience has been profitable.

Professor Mapes: Our valued friend, Mr. Bell, has occupied nearly all the ground. I give—as I am requested to do so—my experience in soiling. I have confined my cows in a clean stable—fastened to a pole and cut their feed for them. I was told they would suffer for want of exercise. I have not found that to be true. It is true that their flesh and yield of milk are both diminished by much exercise. Cattle are less exposed than when pastured—so they are protected from storms, the calves are better taken care of, their manure—especially the fluid portion, is all saved—it should be mixed with muck and other solid manures, while yet warm, when it has not lost by chemical change—far better than pumping it out of the cistern after a week. We add to the manure all the wash of the house. When the manure is not sufficiently wet we pump water upon it. When the urine is put on warm from the cattle it decomposes ten times as much muck as it does when cold. Great labor is saved in soiling. I have found much advantage in using liquid manure. On one occasion I saved a pea crop by it—it is well to throw in a little diluted sulphuric acid. My manure is in little danger of fire fanging. My cattle are more protected from fliss in the stall. They are kept cooler in Summer than in Winter. The cows give more milk, and they keep better health than cows in pasture. In the pasture they get but one sort of food—in soiling a variety, which, if judiciously served to them, is more agreeable and useful. When they are scouring from too much green feed I give them carrots, the peptic acid of which invariably cures them, and gives them aid in digestion. I give, among other roots, the Vienna Cauli-Rapa, (cabbage turnip,) which is very superior. Vilmorin has introduced a hybrid of the turnip and the cauliflower. For green food, in the season for it, our Indian corn is excellent, as shown by Mr. Bell. I prefer Stowell's evergreen corn to any other for that purpose. It grows larger, the stalk is almost as sweet as sugar cane, the joints (which in other Indian corn are hard) are in this corn quite tender, a man can eat it, and it gives a double quantity on an acre. The juice of it has been tried, and is up to eleven degrees Beaumais—equal to the juice of Santa Cruz cane.

Soiling saves interior fencing, and it is a great saving when not only the cost of the fewer repairs are stated, but of the ground on both sides of the fences, which cannot be cultivated some distance from the fences. The stables, in soiling, must be kept clean and well ventilated, of course—or the cattle must be turned out for exercise in time. I have no occasion to turn them out. I have mentioned the carrot; it has a value far beyond that of a mere food—it contains peptic acid of excellent use in digestion; it is now used in making jellies; it is a cow doctor, and always cures. One bushel of oats, and another of carrots, are fully equal to two bushels of oats. The excretia of the cattle fed with carrots, do not contain that undigested oats, corn or hay or what else; they almost resemble those of a healthy man. I have found the strap-leaved red-top turnip good in soiling—it can be profitably raised, planted at any time—stand out the winter—get pithy before Spring. Rutabagas stand out in Winter, and do much good to the soil as a mulch. In Spring I pass a roller over them all to crush them, and then plough them in—little additional expense. Mr. Campbell cooks the feed and gains by it. I cut my Stowell ever green corn stalks—put them in a vessel with a little salt, pour hot water on them, cover them up with a cloth, and when cool, they make a very acceptable food.

Peaches in Brandy.—Wipe, weigh and carefully select the fruit, and have ready a quarter of the weight of powdered white sugar; put the fruit into a vessel that shuts closely, throw the sugar over it, and then cover the fruit with brandy; between the top and cover of the pot put a piece of double cap paper; set the pot into a saucepan of water till the brandy is quite hot, but not boiling; put the fruit into a jar, and pour the brandy upon it, and when cold, put a bladder over, and tie it down tightly.

From the Horticulturalist.

Strawberries at the South.

BY WM. WHITE, ATHENS, GA.

I resume my notes upon fruits with the strawberry—a fruit capable of being brought to great perfection in this climate. To make the most of a strawberry bed, it requires a suitable situation and soil, clean and deep culture, vegetable manures, regular watering in dry weather, and mulching the roots. The varieties we will consider hereafter.

As to situation select the lowest part of the garden. A sandy piece of bottom land near some stream where the soil is deep, moist and cool, is particularly suitable for this plant. No trees should be permitted to overshadow and drink up the moisture of the soil. Fresh cleared lands are best and most easily kept free from weeds. Dig the ground two spades deep, the better to enable the plants to withstand drouth. A soil rich in nitrogenous matter is not desirable. Decayed vegetable substances are the best applications in order to produce fruit, animal manures increasing the growth of vine and leaf without much increase of fruit. A thick coat of swamp muck or leaf mould decomposed by the action of leached or unleached ashes, and well incorporated with the soil, is decidedly the best application in order to insure a crop.

When the soil is prepared and leveled, make your rows two feet apart. Set the plants fifteen or eighteen inches apart in the row. Select stout healthy runners, rejecting old roots, and plant first three rows of pisillates, then a row of some good hermophrodite variety, then six rows of pistillates, then another of hemorphrodites, and so on until the ground is planted. Choose damp weather for the operation. They may be planted, however, at any time in freshly dug soil in the following manner: Make holes at the proper distances in the rows; lay the plants carefully therein, spreading out the roots just as they grew; pour on them a half pint or so of water from the spout of a watering-pot, working the earth in about the roots, and finishing by covering them fully with the moistened soil, and over this place some of the dry earth, pressing it firmly about the plants. Choose the evening, and keep the roots from exposure to the sun until replanted. Remove the larger leaves to diminish evaporation. Cover the earth between the plants, but not the plants themselves, with a mulching of straw, decayed leaves, or old tanners' bark. They may be transplanted at any time, but the last of September will give them time to establish themselves, so as to produce well the ensuing season. Newly planted beds are more easily kept in a bearing state through the entire season. As soon as the blossoms begin to appear the ensuing Spring, the great necessity is water, which should be given liberally, both to swell the fruit and force the plant to throw up new fruit stems. If three days pass without a shower, sprinkle the foliage every evening. Mr. Peabody is thus able to produce abundant crops from March until frost. Keep the ground always free from weeds, and clip off the runners before they emit roots, until late in the season, when they may be allowed to root in order to form new beds and also new stools for the next year's crop. Every Winter the plants should be thinned to their original distance, selecting new stools. Dig the bed deeply between the plants aad mulch as before. If the crowns of the plants are covered they will generally die out. Do not allow the hermaphrodite plants to overrun and crowd out the more productive pistillate varieties.

For a Spring crop, the system of culture by alternate strips is the most convenient. Indeed, when peaches and other fruits become abundant, one at last grows weary of even strawberries. To condense the whole subject of strawberry culture into a few words, plenty of water and keeping the plants at suitable distances, in well cultivated and mulched soil, will extend the strawberry season almost indefinitely.

The following varieties have been cultivated in our gardens, some of them, however, but for a single season, and among the varieties lately obtained, there have been none which have given us much encouragement to increase the list beyond the first four.

1. *Large Early Scarlet.*—The most valuable hermaphrodite variety. Its points of excellence are, bearing uniformly a good crop planted by itself; great hardiness in resisting drouth, producing fruit of fair size and flavor when other varieties entirely cease bearing without artificial watering. I could not help observing this the present dry season. It is equally hardy in resisting cold.

Another good quality is, its distinctness of foliage, enabling the cultivator to leave a due proporsion in his beds of perfect flowered and pistillate varieties. Properly cultivated, it is of good size and flavor, and being perfect flowered, if but one variety were cultivated, this would be the most desirable. It can be kept in bearing through the season.

2. *Hovey's Seedling.*—If we consider size, flavor, hardiness, firmness of the berry for market purposes, productiveness, ease of gathering, and its habit of long continued bearing when properly cultivated, in connection with its excellent flavor, it is doubtful whether this strawberry will be soon excelled. It is nearly as hardy as the foregoing, but requires more water to make it swell its fruit. As it is pistillate, it needs a fertilizer. It is generally picked for sale before it is ripe, and it is then acid; but when properly matured, it is excelled by few. For market purposes, the foregoing two varieties are quite sufficient.

3. *Bishop's Orange.*—Why does no one speak a word in favor of this fine old variety? Mr. Thomas says: "worthless, except in a deep, rich, sandy soil." Mine are on a clay, and they bear profusely for two or three weeks. They are earlier than Hovey's, and in quality better than either of the foregoing; and whatever kinds may be raised for market, it is a most desirable variety for home use. While it lasted we preferred it to all other kinds except Burr's New Pine. It is a very hardy and desirable variety.

4. *Burr's New Pine.*—I have cultivated it two years. It has proved to be of the most sweet and delicious flavor, and new beds well watered show fruit most of the season. But it has not produced with me hitherto a full crop, and newly planted beds are easily killed during the Winter, and are quite as susceptible to injury from the sun in Summer, where they are planted in the Spring. If as hardy and productive as the foregoing, it would be the most desirable of strawberries. I liked it better last season than I do now. One can hardly form a judgment this year on account of the drouth.

Of those introduced here, the foregoing are the only ones worthy of cultivation. We have found no other sorts equal to the common wild fruit of our pine woods and old fields. The following have been tried:

5. *Cincinnati Hudson.*—This variety here is only moderately productive, yielding less than either the three first of the list, and is too acid for most tastes. Inferior in quality and productiveness.

6. *Boston Pine.*—Not prolific in fruit, and making few runners during our dry Summers. It sometimes bears a few fruit the last of October, in wet seasons, but at no time produces much of a crop. Rejected on this account by our cultivators.

7. *Black Prince.*—So far seems unworthy of culture. It is by no means equal to Burr's New Pine in flavor, and in bearing produces about an equal crop with Boston Pine, and like that variety, does not throw out many runners, but in foliage and fruit is entirely different.

8. *British Queen.*—Not productive enough to be of any service. Hardly bears enough to test its quality.

9. *Burr's Rival Hudson.*—though a hardy and tolerably productive sort, is not worthy of culture when the first three varieties of this list can be obtained.

10 and 11. *The English White* and *Red Wood* I cultivate for the singularity of their fruit and foliage. This fruit is agreeable, but not very abundant. The Red Wood was the first strawberry to ripen the present year, which was, perhaps, owing to its position.

12, 13, 14 and 15. *Buist's Early, Methven, Victoria* and *Prolific Hautbois*—were in our garden, and some few plants still remain, but no one has thought it worth while to preserve them when other and more desirable varieties are so readily obtained. They have not proved productive with us.

Color of Plants.—The green color of plants is produced by the mixture of carbon, which is probably of a deep blue, with the celular texture, which is of a whitish yellow. The carbon is obtained partly from the earth, partly from the air; but light is necessary for plants to decompose the carbonic gas, of which they retain the carbon only, without the oxygen; and therefore, plants growing in darkness are not *green*, but *white* or *yellow;* as those which are earthed up, celery, &c. This also accounts for the bending of plants towards the light.

From the American Artisan.

Scientific and Statistical.

Tunnels of the World—Embracing a large Proportion of those Structures finished, in progress and projected, in the several States of the World.

The following article was prepared by W. L. Dearborn, Esq., Civil Engineer, of Roxbury, Mass., for J. M. Keith, Esq., Junior Counsel for the Hoosac Tunnel.

Although scarcely any two tunnels are exactly alike as to the strata through which they pass, the size, length, number and depth of shafts, the quantity of water to be extracted, the climate of locality, and the lining, all of which affect the cost, and the time required for the cost, still a near approximate decision can be arrived at by examining the details of those already finished, and comparing them with a proposed tunnel, if the same tools and appliances are to be used for working in both cases. If improvements are introduced, such as steam drills, cutting and boring apparatus, &c., then the cost and time will be modified in proportion to the rapidity and expense with which these machines can be made to do their work.

The machines invented for boring Hoosac Mountain and excavating the Mount Cenis tunnel, exhibit great ingenuity; the former has been tried, and gives good results, bidding fair to answer the ends proposed—but a longer trial is required to determine its merits. The latter, it is said, will cut twenty-two feet in solid rock in 24 hours, but it has not, to my knowldge, been tested to any great extent, so that we must wait further experiments before a correct opinion can be formed of its ultimate aid in tunneling.

The tunnels enumerated have been constructed on the usual method of carrying on such works.

The construction of tunnels for aqueducts, mining, &c., dates back to the earliest period of history. Those mentioned by Strabo, through Mount Platus, for regulating the height of the water in Copais, in Bœotia, are some of them thirty stadia, equal to 3,447 miles in length, and were works of great labor. The tunnels of Egypt, and those of the celebrated Roman acqueducts, and the tunnel at lake Albano, 6,000 feet long, cut through lava in 398 B. C., are monuments worthy of their age.

There is a tunnel reported to have been found under an arm of the sea near Marseilles, from Abbey St. Victor, to Fort St. Nicholas, having an arch of 60 feet span, and being 1,625 feet long, supposed to have been of Roman origin. The first tunnel constructed for canal navigation, was on Languedoc canal, in 1666, planned by F. Andreossy.

France has 66 tunnels on her canals and railroads, 36 of which have an aggregate length of 45.40 miles The longest of small size is 7.45 miles, and that of large dimensions is 3.52 miles long. The Rouen and Havre railroad has 8 tunnels, Paris and Lyons 8 also.

That truly grand work, the acqueduct from the Durance to Marseilles, has 3 tunnels, whose total length is 10.66 miles. That through the Taillades had 7,320 gallons of water pumped out of it each minute, during a part of the time it was in progress, to keep it free, and required all the genius of M. Montretcher, the engineer, to carry it on to completion. There was a tunnel projected for the Picardy canal of 8.51 miles in length, but two short ones were substituted for it.

On the German railroads there are ten tunnels. The Georgia Stalton tunnel, in the Haize Mountains, is 6.48 miles long. It was begun in 1777, and finished in 1800, and cost 71,172.

Spain has some railroad tunnels. The Sardinian States have a number; one at Mount Giovi, nearly two miles long, on the Genoa and Turin railroad. There are on this railroad in 25 miles through the Appenines, 9 tunnels, and the road is considered one of the most difficult pieces of railroad engineering ever undertaken.

The Mount Cenis tunnel, projected for the Lyons and Turin railroad, is one of the grandest works of this nature ever contemplated. It is to be 7.63 miles long and 19x25 feet in size. The plans for it and the machinery to work it, were devised by Chevalier Mause, the distinguished engineer of this railroad. A board of scientific gentlemen, engineers and geologists, were appointed to examine their plans, &c., and they decided unanimously in favor of the project. The estimated cost is $2,615,000, and the time fixed for its completion is five years. The summit of the post road over this road is 2,400 feet above this. No shafts are to be sunk.

In Switzerland, in Val Cristallena, the Alps are to be pierced by a tunnel for the Italian and German Junction Railroad, 3.5 miles long.

The Sommering tunnel through a moantain of that name in Austria, is one mile long.

Hungary has a mineral railroad tunnel 10 miles long, just completed.

England has 48 canal tunnels, of an aggregate length of forty miles, the longest of which is over 3 miles, on the Huddersfield canal, if we except one reported 18 miles long, on the Bridgewater canal. She has also 79 railroad tunnels, 49 of which amount to 35.83 miles, the longest is 3.01 miles.

The London and Birmingham railroad has 8 tunnels, London and Dover 5, Newcastle and Carlisle 5.

A canal tunnel of 5 miles in length was projected for the Manchester and Colton canal, and one 4.5 miles long for the Porthsmouth and Croydon canal, but not constructed.

The United States have 67 tunnels on canals and railroads, the longest of which is about one

The details of these are now difficult to obtain. Many of them are short, however.

Baltimore and Ohio railroad has 16 tunnels; Parkersburgh railroad 17; Hempfield railroad 7.

A tunnel of 4.04 miles in length was projected by the celebrated engineer, Gen. Bernard, in 1852, for the passage of the Alleghany Mountains by the Chesapeake and Ohio canal.

In the foregoing statement there are, no doubt, many tunels omitted, as I have mentioned those only that are contained in works in my own library, with three or four exceptions.

The art of tunneling has been so extensively practised, that they are not now looked upon by engineers and others as such formidable obstacles as they formerly were.

From the Farmer and Planter.

The "Hog Crop"---Profits of Making---Measuring Corn, &c.

MESSRS. EDITORS:—As an evidence that we can better afford to make than buy our own pork, I send you the following statement:

On the 22d of December, 1851, my sow dropped ten pigs. They were fed during the winter on say ten bushels of corn and peas—peas boiled. In the early part of the summer they had a few carrots—afterwards they had only the run of the oat stubble, and a few peaches, until I commenced feeding them in July or August. Wishing to try a plan which appeared perhaps in the *Southern Planter*, and was copied into the *Soil of the South*, I commenced feeding with green corn, stalks and all. This gave them a start to grow, and put them in a thrifty state. After corn ripened, I fed corn in the ear, until the pigs were killed, except two weeks, when they had the run of the peas, gathering their own food. Nine of the pigs were killed December 11, lacking twelve days of being a year old, and weighed as follows:—186, 192, 160, 142, 184, 150, 156, 166, 172—aggregate, 1,508 lbs.—average, about 168. Now, for cost: nine bushels corn and peas, $9; carrots and green corn, $3; 90 bushels corn $45—total $57. This is making slaughtered clean pork at a cost of less than four cents per pound, with the common native stock, with high priced food in the beginning, and by a young farmer. I do not include in the cost the gleanings of the oats and peas, because without the hogs they would have been wasted, but I think I put the fattenning corn at rather too high a figure—ten bushels per head. My limited experience is in favor of killing hogs young. Never keep them through two winters. "A short life and a merry one," is good hog philosophy.

The following is my rule for measuring ear corn in the crib. Multiply together the inside length, breadth and depth, in feet, or feet and fractions of a foot; then multiply this product by 4, and cut off the right hand figure, for dividing by 10. The reason of the rule is this: a cubic foot contains 1728 cubic inches, and a bushel contains 2150.4 inches. Now, if the cubic feet of the crib (found by multiplying together the length, breadth and depth), be multiplied by 1728, and divided by 2150.4, we shall have the number of bushels of *shelled* corn or wheat that the crib will hold. But 1728 bears the same proportion to 2150.4, as does 4 to 5 very nearly. So that multiplying the *cubic feet* by 4, and dividing by 10, answers the same purpose as multiplying by 1728, and dividing by 2150.4, and then taking half for the cob. If the corn is very good, with deep grains, or the crib holds over 500 bushels, I would divide by 9 instead of 10.

In conclusion, let me inquire of you and your correspondents what rule will do for measuring *unshucked* corn in a crib or pen? Also, how many pounds of peas in the hull will thresh out a bushel?

Respectfully, V. M. BARNES.

Winfield, Ga., May, 1853.

This is the practical Agricultural philosophy that the "American Cotton Planter" proposes to teach. We can and we must raise at home our own breadstuffs. Will some of our correspondents give us an answer to the inquiries at the conclusion of this article. We shall be pleased to hear from our young planting friend again.—ED.

SPEED OF RAILWAYS.—Dr. Lardner adopts some ingenious illustrations to render familiar the extraordinary velocity with which express trains move. The Great Western Express to Exeter, England, travels at the rate of forty-three miles an hour, including stoppages, or fifty-one miles an hour without including stoppages; to attain this rate, a speed of sixty miles an hour is adopted mid-way between some of the stations; and in certain experimental trips, seventy miles an hour have been reached. A speed of seventy miles an hour is about equivalent to thirty-five yards per second, or thirty-five yards between two beats of a common clock.

All objects near the eye of a passenger traveling at this rate will pass by his eye in the thirty-fifth part of a second; and if thirty-five stakes were erected at the side of the road, a yard asunder, they would not be distinguishable one from another; if painted red, they would appear collectively as a continuous flash of red color. If two trains with this speed passed each other, the relative velocity would be seventy yards per second; and if one of the trains were seventy yards long, it would flash by in a single second. Supposing the locomotive which draws such a train to have driving wheels seven feet in diameter, these

wheels will revolve five times in a second; the piston moves along the cylinder ten times in a second; the valve moves and the steam escapes ten times in a second—but as there are two cylinders, which act alternately, there are really twenty puffs or escapes of steam in a second.

The locomotive can be heard to "cough" when moving slowly, the cough being occasioned by the abrupt emission of waste steam up the chimney; but twenty coughs per second cannot be separated by the ear, their individuality becoming lost. Such a locomotive speed is equal to nearly one-fourth that of a cannon ball; and the momentum of a whole train moving at such a speed, would be nearly equivalent to the aggregate force of a number of cannon balls equal to one-fourth the weight of the train. That a "smash" should follow a "collision," is no subject for marvel, if a train moving at such speed—or anything like such speed—should meet with any obstacle to its progress.—*Dodd's Curiosities of Industry.*

PLANTING STRAWBERRY VINES.—Those who wish to cultivate this delicious fruit, perhaps need reminding that the present month is the proper season for planting the vines. The ground should be prepared by trenching to the depth of at least twenty inches, and should be well drained and richly and freely manured. For the subsoil, well rotted stable manure is a good application. The surface soil should have a coating of guano, and charcoal dust, also a half bushel of wood-ashes to the square rod. Give the plants plenty of room and water them as they need, and they will generally bear fruit the first season.

MANURE FOR AUTUMN ROSES.—Mr. Rivers, a famous Rose Culturist, applies a mixture of wood ashes and guano, in the proportion of half a peck of guano to a bushel of ashes to his late roses, with most excellent effect. About two quarts of the mixture is applied to each shrub or tree, in a circle eighteen inches in diameter around the stem, where it is suffered to remain undisturbed until autumn. It should be applied early in June, and covered with a thin grass mulch, and the effect will be, it will retain the dew and showers, and keep the tree in constant and vigorous growth, which is very necessary to the production of a good crop of flowers in the fall.

From the American Artisan.

Tubular Bridges.

The tubular bridge which crosses the Straits of Menai, thus uniting the Island of Anglesea in the Irish sea with the western coast of Wales, is a remarkable structure, which has attracted great attention among railroad Engineers. As Mr. Stephenson, its distinguished architect, is now in Canada, and proposes to construct a similar bridge for the Grand Trunk Railway across the St. Lawrence at Montreal, the following description from Rev. Mr. Prime, one of the editors of the *New York Observer*, now travelling in Europe, may interest our readers:

But there was nothing of interest to speak of till we came to the tubular bridge over the Menai Straits. This, I regard as the greatest mechanical wonder of the world, and if my admiration of it had been great when reading the many and graphic descriptions we have had of it, my wonder and pleasure were greatly increased when I came to see it. The cars swept through the tube fifteen hundred and thirteen feet in length, and we had no other sensation than that of passing through any other covered bridge; but as soon as we reached Bangor and the train paused, I left it and let it go on without me, while I returned to study this stupendous work. The problem to be solved by the architect was this—to build a bridge fifteen hundred feet over an arm of the sea, so high in the air as to permit the loftiest mast to pass under it, and without piers to obstruct the navigation. The point on the Straits selected for the purpose was fortunately provided with a rock rising from the water, and nearly in the midst of the Straits. This was the base of a pier, but then the bridge, without a draw, must stretch four hundred and seventy-two feet to one shore, and four hundred and sixty to the other, and at the height of at least a hundred feet above the sea. Mr. Stephenson, the architect, devised, and under his superintendence has executed this work, which promises to stand an enduring monument of ingenuity, enterprise, and perseverance, under difficulties the most disheartening and to ordinary minds insurmountable. To the work he brought, as the first and chief element of success, his own genius and courage, and to these he added eighteen hundred men, for whom cottages were built along the shore, as the labor of years was before them. The bridge is to be of iron, nothing else; it is to hold itself up without an arch and without steel cables to bind it to the rocky shores. It is to be built on the shore, to be floated on the water and then raised perpendicularly, and stretched horizontally from land to land. Can it be done? The world laughed and wise men said—No! it could not be done—and it would fall of its own

weight if it were done. The man of *science* pushed on the mighty work. Plates of iron were riveted together, and a tube, not round, as most people suppose, but square, or rather rectangular, being thirty feet high and fourteen feet wide, was built; the labor of this army extended through four and a half years. Two millions of rivets hold these iron plates in their tenacious grasp, and the tubes weigh no less than eleven thousand three hundred and sixty tons! During three years, these shores presented the busiest and most exciting of peaceful scenes. Schools and churches were built for the families gathered here. The arts of life were drawn around the settlement, and it was as if a new city had been planted on the Straits of Menai. Sickness was rare, for the air is pure and healthful; but when it did come, and death with it, the consolations of religion were not wanting to the dying or the living. More were born than died. The work went on and at length it was done. Hydraulic presses were made to raise the mighty weights, and inch by inch they rose, till in three weeks from the time they began to ascend, they were planted on the lofty pier and stood sublime. They did not break of their own weight. They did not bend. But would they bear the pressure of a train loaded, thundering over the awful chasm? or would the mass of iron crush or fall in ruins like a rent world, when the first train of cars, with its living burden, should trust itself on the treacherous bridge. The train was ready, not with a burden of live men and fair women, to re-enact the Norwalk tragedy, (an event that dishonors our country in the eyes of Europe) but loaded with iron and stone to four times the weight of any train that would be required to pass over the trembling structure. Mr. Stephenson, the architect, mounts the locomotive himself, the engineer and solitary passenger. He moves on, and reaching midway of the longest tube, he arrests the train and pauses there that the heaviest pressure may at once be felt, and the grand experiment be tested once for all. It was not a rash and hair-brained feat. It was the calm confidence of a man of calculation, who knew what he was doing, and that he was safe. The sinking of that line, with the tremendous weight to which it was there subjected, was less than half an inch! The experiment was tested. It cost five millions of dollars, and was cheap at that.

I walked through it, and then by a flight of narrow steps ascended to the top of it and walked out on the flat roof on which the strain comes; and when I saw the power of those concatenated plates, it was impossible to have the sensation of fear, while I felt sure the structure will stand till some convulsion of nature shakes the sea and earth.

One acre of ground planted with corn in hills at four feet apart, contains two thousand, seven hundred and twenty-two hills.

Hints to Gardeners.

HIGH CULTURE FOR GRAPES.—Dr. Underhill, of Crown Point, whose grapes have attained high reputation in the New York market for size and flavor, pays great attention to the thorough preparation of the soil, and keeps it in the highest state of fertility by manuring and deep culture. He usually applies bone dust at the rate of twenty five bushels per acre, and uses largely a compost of swamp muck, rich loam, leaf mould, sods, leaves, and grape cuttings, with stable manure, liquid manure, yard drainings and potash. Grapes will grow on any soil, if properly prepared. He has thirty acres in vineyard, and it is nearly all trenched three or four feet deep, but he now trenches by running a double Michigan plough some fourteen inches deep, and following it with the largest size subsoil plough, about as much deeper. This is a cheap and effectual mode of deepening the soil. Of course his land is thoroughly drained and in constant cultivation. We gather this from a statement in the *New York Cultivator*.

SOAP SUDS FOR WATERING PLANTS.—Nothing can be better for summer watering of plants and vines, than the suds of the weekly wash, and no one who desires a good garden will suffer it to be wasted. For cabbages, cucumbers, beets, and the like, it seems especially adapted, and one of the most thrifty grape vines we ever saw, was watered with soap suds almost daily in dry weather. A large supply is not needed at once, but frequent waterings promote rapid and vigorous vegetation.

SLITTING THE BARK OF TREES.—This is sometimes practiced with bark-bound trees, but it is always bad management. The bark remains thin and is apt to peel off and injure, and even kill the tree. It is a better way to aid the growth by loosening and manuring the soil about the roots, scraping off the moss and rough bark and washing the trunk with weak lye or soap suds.

HINTS FOR STOCK RAISERS.—Mix occasionally one part of salt with four or five of wood ashes, and give it to your stock of all kinds during summer and winter. It promotes health and growth materially. Green and fermentable food produce flatulency, and this mixture affords a remedy.

It is said that if horses are liberally supplied with salt and clean ashes, they will neither be troubled with botts nor cholic.

[FROM THE AMERICAN COTTONPLANTER.]

THE SOUTH.

CIRCULAR OF THE EXECUTIVE COUNCIL.

To the friends of our cause throughout the slaveholding States we appeal. "The Agricultural Association of the Planting States," has, for its object, the diffusion of knowledge as it appertains to all branches of agriculture and of our peculiar institutions. We desire a closer bond of fellowship that we may develop our resources and be united as one man in our interests.

It has been said that "the world is against us." Be it so. The world, we know, is dependant on us, and we glory in our position. Let us be true to ourselves, and all will be well.

In the discharge of our duty as "Executive Council of the Association," we have fixed the time of the next meeting of the Association to be on Thursday, the 1st day of December next, at Columbia, South Carolina, which will be during the first week of the session of the Legislature of that State. From every slave State gentlemen of distinction have been applied to by us to present essays and addresses before the Association on the various subjects of interest connected with it.

To the Southern press we also appeal, and we hope that every newspaper will not only publish this circular, but will give their ablest efforts to the cause, time and again, in their editorial columns.

We earnestly desire that all who feel the importance of the work before us, and desire to advance and firmly establish this Association, will send forward their names and initiation fee, which is $5, to Doctor N. B. Cloud, Lockland, Alabama.

The funds raised will be applied to the publication of all the essays and addresses for gratuitous distribution in book or pamphlet form.

Ex. Council Agricultural Association

E. A. HOLT, Ala.
DR. C. BELLINGER, Ala.
B. S. BIBB, Ala.
G. H. YOUNG, Miss.
W. ANDERSON, Fla.
A. G. SUMMER, S. C.
J. M. CHAMBERS, Geo.

Ex-officio—GEO. R. GILMER, Geo. Pres't.
" N. B. CLOUD, Ala. Sec'y.,

REMEDY FOR BURNS.—Dr. Reese, physician of Belevue Hospital, New York, has been making experiments concerning the best mode of healing burns and scalds, and checking the acute suffering. He has found that flour, thrown on with a common dredging box, is one of the best and most efficient remedies yet discovered. The external air is one of the chief causes of the suffering, and flour thus applied, both heals and closes the wounds to the atmosphere. The edges of the wounds which remained open he dressed with lime water and oil, applied by a feather. Dr. Reese says the above application made to wounds by fire, hot water, gun powder, &c., has been most happy in the practice at the hospital.

RICE BLANCMANGE.—This forms an excellent accompaniment to preserves of any kind, or to baked apples. It is made as follows: Put one teacupful of whole rice into half-a-pint of cold water; when the rice cracks, or begins to look white, add one pint of milk, and a quarter of a pound of loaf-sugar. Boil it until the rice has absorbed the whole of the milk, stirring it frequently the whole time. Put it into a mould, and it will turn out when quite cold. If preferred hot, it may again be made warm by being placed in the oven for a short time. It may be flavored with lemon, cinnamon, &c., but is most wholesome without, and forms both an elegant and very economical dish at any time.

PICKLED PEACHES.—Take a gallon of good vinegar and add to it four pounds of sugar, boil it a few minutes, remove any scum that may rise; then take cling-stone peaches that are fully ripe, rub them with a flannel cloth to get off the down upon them, and stick three or four cloves in each; put them into a glass or earthern vessel, and pour the liquor upon them boiling hot; cover them up and let them stand in a cool place for a week or ten days, then pour off the liquor and boil it as before, after which return it boiling to the peaches, which should be covered up and stored away for future use.

Butter is improved by working the second time after the lapse of 24 hours, when the salt is dissolved, and the watery particles can be entirely removed.



American Cotton Planter.

MONTGOMERY, ALA., NOV., 1853.

N. B. CLOUD, M. D., EDITOR.

Our Agents.

WM. STRICKLAND, Book-seller, No. 28, Dauphin street; BOULLEMET'S LITERARY DEPOT—corner of Royal and Dauphin street; H. H. CARVER & Co., Battle House Book Store, Mobile; from any of whom the back numbers may be had.

A. P. PFISTER, Exchange Corner; C. R. HANSFORD, Market street, Montgomery.

With *The American Cotton Planter*, our agricultural friends will find all the new and valuable publications of the day, either literary or agricultural, at the above-named Book Stores.

Mr. AMOS TRAVIS is our agent at Gainesville, Sumter county.

Mr. N. PLUMB, Sparta, Conecuh county.
E. B. FOX, Sandy Ford, Fla.
Capt. J. JACK, Havana, Greene county.
WM. G. BREWER, Tuskegee.
H. C. BISSELL, Carlowville.
Dr. WM. CUNNINGHAM, Burnt Corn.
Dr. J. F. DORTCH, Camden, Ala.
E. J. CAPELL, Esq., Rose Hill.
ISAAC PARKS, Oak Bowery.
Dr. BATT PETERSON, Clayton.
JAS. MONTGOMERY, Fife, Ala.
N. A. MCMILLAN, Canton.
Dr. J. E. POELLNITZ, Montpelier.
DR. JOHN A. WHETSTONE, Bastrop, Louisiana.

G. M. REYNOLDS Mr. TURNER, Mr. B. M. CLARK, Mr. H. P. DOUTHIT. S. T. STANTON and FRANK SPENCER, are our traveling agents.

☞ We would respectfully ask the attention of our weekly exchanges, and especially those in Alabama, to the Prospectus of the American Cotton Planter for the year 1854, our second volume, to be found on the first page of this number. If our Editorial friends could spare the small space to give it a few insertions in their columns, we should receive it as a marked favor, to be reciprocated at the earliest favorable opportunity offering.

☞ We hope our subscribers, and those intending to become subscribers to the second volume of the "Cotton Planter," will avail themselves of the earliest opportunity to send in their names and dollar, that we may know at an early period how to arrange our Editorial for 1854.

Work for the Month.

This is still another cotton month, and the work of gathering should be prosecuted vigorously. The cold, rainy, disagreeable weather of winter is coming, when the cotton will be stained and blown out, and the work of picking greatly retarded. All the wheat of course is sown by this! The hogs of course should be fat early in this month, so that they may soon be gotten up in close pens preparatory for pork making, as the first cold frosty weather that comes toward the close of this month should be taken advantage of for this important business. All experience has proved that it is good economy in this climate to make bacon early, which admonishes the necessity of having hogs fattened early. One pound of good fat bacon raised at home is worth to the cotton planter 8 lbs. raised in Kentucky. We wish our planters all understood the rationale of this philosophy. We hope some of our correspondents who know from practical experience the true value of raising at home their own "hog and hominy," will relieve us in this argument, as our engagements are pressing just now.

Agricultural Association of the Planting or Slaveholding States.

On the opposite page, we again lay before our readers the Circular of the Executive Council of this Association. We again respectfully ask the attention of our readers to it, and especially do we ask our exchanges to notice it, in such manner as to engage the attention of their readers. Several of our weekly exchanges have noticed this Circular in a spirited manner; others, however, have not given it even a "god-speed." We assure our editorial friends that they are much more interested in the success of this effort than at first view they may suppose. An enlightened and intelligent community of planters will sustain the press.

Our Agricultural friends, and the members of the Association especially, will bear in mind that Thursday, the first day of December, is the day of meeting at Columbia, South Carolina. Who will go? Where are the Carolinians, scattered throughout the South-west? A most propitious opportunity, this, to make a pilgrimage to our native Carolina. We have learned from a staunch friend of this Association, in Georgia, that there will be *one thousand* Georgians there. How many Alabamians will go?—and Mississippians, and Floridians, and North Carolinians, and Virginians, and Tennesseeans, and planters west of the Father of Waters? This is a convocation of the working men—the planters, the producers of the South—the Republic's true wealth. Shall we neglect our own best interest?—treat thus amiss the only sure and speedy means of acquainting ourselves with the science, practical and philosophical, of our profession? Who, then, shall be interested? Who, then, shall learn and appropriate, for good and practical use, the science of Agriculture? Providence has blessed us with a country fertile in all the elements of the most

valuable agricultural productions, and a climate propitious to the extreme perfection of these absolutely necessary productions. Shall we longer close our eyes and fold our arms, to slumber, as the sluggard, and thus say—others may attend to their interest, but we planters, we producers of the wealth of the country, will remain "hewers of wood and drawers of water"? We are not yet willing to believe this of the intelligent and enthusiastic planters of the Slaveholding States.

The Executive Council of the Associatien have made arrangements with gentlemen of high distinction in the various departments of Agricultural science and practice, to address the Association during its assemblage. We have also assurances that the meeting will be, in every way highly acceptable to the people of the Palmetto State, and also to the citizens of Columbia.

Addresses have been promised by, and may be expected from the following gentlemen:

SOUTH CAROLINA.

John Bachman, D.D. L.L D.
Hon. J. B. O'Neal,
Hon. W. H. Gist,
Prof. F. S Holmes,
Hon. R. F. W. Allston,
H. W. Ravenal, Esq.
Prof. R. T. Brumby.

MISSISSIPPI.

Dr. H. A. Swasey,
Thos. Affleck, Esq.

GEORGIA.

Dr. W C. Daniell,
J. Van Buren, Esq.
R. J. Hardwick, Esq.

ALABAMA.

Col. Isaac Croom,
Absalom Jackson, Esq.
Dr. A. A. Lipscomb,
Col. Wm. DeForest Holly.

DISTRICT OF COLUMBIA.

J. D. B. DeBow, Esq.

In addition to the gentlemen above named, several have partially promised to address the meeting or send an essay. There are also some gentlemen that have been addressed yet to hear from

Analysis of Soils.

☞ In that excellent article in our last number, "The Prairie Soils of Alabama," we regret that several typographical errors occurred, though we took unusual pains to have it correct. These errors, however, we are glad to say, mostly occur in simply misspelling some of the technical terms used in the illustration of the subject. Persons atal conversant with the science of Geology will have no difficulty from this cause, in fully comprehending the author. Professor Harper clearly evinces, in the manner in which he has treated this subject, his practical knowledge of the science of Geology, and his theory of the prairie formations is certainly plausible and interesting. He is a practical analytic Geologist, fully prepared with the necessary appliances for analyzing soils. Any of our agricultural readers who may wish to have specimens of the soil of their plantations analysed, should not fail to embrace this most favorable opportunity. In our August number will be found full directions for collecting specimens of soil for this purpose.

In this number of the Cotton Planter we furnish our readers another article from the same pen, on a subject of paramount interest to the cotton-planters, especially, of the country. This article is designed particularly as propositions for the consideration of the "Agricultural Association of the Planting or Slaveholding States." We hope every member of the Association will consider the matter well, and go up to Columbia prepared to give these propositions the attention that the importance of the subject demands.

Georgia Wine.

We had presented to us, a few days since, a couple of bottles of the most excellent sparkling Southern Wine, made from the Devereux grape, and of the vintage of 1852. This Wine, in our humble opinion, lacks nothing but the mellowing influence of age to make it equal to any of the European Wines. This Wine was made by Col. L. D. BUCKNER, of Scottsboro', Ga., and contains but one-twelvth of brandy, and a small proportion of sugar, and Col. Buckner is sanguine in the opinion that it may be made successfully without the aid of either.—We received also from the same source some beautiful specimens of Apples and October Peaches. The Apple that attracted our attention most, was a new variety to us, known in Georgia as the Romanite—a beautifully shaped Apple, deep red and a good keeper, hanging on the trees after the leaves have fallen off. When will our planters give attention to the orchard and the vineyard?

Who will Respond?

We ask the attention of the readers and the friends of the Cotton Planter, to the subjoined letter recently received from a friend of the enterprise, who proves his "faith by his works." We publish the letter, omitting names, &c., as the proposition of the writer could not be well made public otherwise.

We had intended not to mention this subject again, as our pecuniary losses on the first volume are near the figure of our expectations in the beginning of the enterprise, and for which emergency of course we had prepared ourselves. The proposition contained in this letter is doubly meritorious. If successfully carried out, the paper is sustained without loss to any one. And again, which is the most *valuable feature*, the "Cotton Planter," with its fund of practical information, finds its way at once into one thousand families, to be read by the very planters *who think* they are unable to take an Agricultural paper, because they have not enjoyed the means of acquiring the information the volume or one number perhaps would teach them,—that it is richly worth one dollar, and that they are not only able to take it, but they must have it, and neighbor A. B. must see it, and he can take it too.

The next number closes the volume. Our friends and readers can now see our labors as Editor and place the proper estimate upon them. Our fixed and determined object has been, improvement,—has been to make each number superior to the preceding. On the first page of

this number will be found our Prospectus for 1854, and our fixed purpose is to make the second volume superior in every respect to the first and fully worthy of the attention of every cotton planter in the South.—[Ed.

MONTGOMERY, Ala., Oct. 11th, 1853.

DR. CLOUD—*My Dear Sir:* It is now too late to get the thousand subscribers to the first volume of the Planter: I therefore propose to be one of fifty persons to give twenty dollars each to make up the difficiency the first year of that journal's financial affairs. Inclosed you will find *Twenty Dollars.* This is not a gift to you, but it is the amount I propose to bear in sustaining the American Cotton Planter, by making a gratuitous distribution of twenty copies to planters of moderate circumstances of my County. You will therefore please direct that number to such persons as you may know of, by applying to the Judge of the Probate Court, who will no doubt readily furnish you with the names of twenty worthy planters of this County, who may not feel able to subscribe for the Planter, but who would read it.

Yours very truly,
E. A. HOLT.

Agricultural Association.

We hereby acknowledge the receipt of $5 from Mr. Thos. Affleck, of Miss., his initiation fee of membership.

We also acknowledge the receipt of three copies of Prof. Tuomey's Geological Survey of South Carolina, elegantly bound, from his Excellency, Gov. Manning of South Carolina.

N. B. CLOUD, M. D., *Secretary.*

We publish below extracts from two letters received from gentlemen selected by the Executive Council to address the Association at Columbia, S. C. These gentlemen will not be present at the meeting. The information contained in their letters is important, and this we offer as the apology for thus laying them before the members of the Association and the readers of the Cotton Planter. We hope soon to receive more full communications from both these gentlemen on these interesting subjects.

STOCK PLACE, NEAR NASHVILLE,
September 29th, 1853.

DR. CLOUD, *Secretary, &c.*

Dear Sir: Permit me, through you, to kindly thank your Society for the honors conferred upon me. May I hope to be pardoned for not attending. I must plead old age and multiplicity of matters requiring my attention. I extremely much regret that my great experience upon this important subject cannot be more universally beneficial. Wool growing was the hobby of my youth and is the pride of my old age I am proud now because my long experience enables me to say with full confidence to my brother Agriculturists in all the Southern or Planting States, that with the proper blood and care they can grow as fine wool as the world affords. The grand staple that all the nobles of Europe and proud men of America must have for clothing, may be resorted to profitably in renovating our tired lands. This great staple must be produced, and it is easy for us to determine that the Planting States, where sheep can graze all the year, can bear down all competition where sheep have to be housed from four to six months and fed upon costly food. Warm climates have greatly the advantage, as sheep by nature are grazing animals, and where they can get succulent food all the year, and the climate sufficiently warm for the fleece and yolk to be all the time soft,—there, I say, the most perfect fleece of wool may be grown. Cold has a different effect, producing upon the fleece a hard or horn-like feeling, hence the recent artificial means of clothing sheep to produce the most perfect staple of wool in high latitudes.

I have the best possible evidence to sustain my opinions—the likeness of Queen Victoria and Prince Albert, in the form of a prize medal for fine wool.

Will you be kind enough to present this my apology to our friends at their meeting.

Yours respectfully,
MARK R. COCKRILL.

—

HALL TOWN, Va., October 8th, 1853.

N. B. CLOUD, M. D., *Secretary, &c.*

Dear Sir: I hasten to answer your letter, and inform you that I am obliged to decline the honor. Important professional engagements prevent my acceptance, which I sincerely regret. Allow me, Sir, through you, to make to the Hon. Executive Council my grateful acknowledgments, and to assure them of the deep interest which I feel in the objects and success of thier laudable Association.

Living as I do in the valley of Virginia, where wheat growing is pursued so successfully, and having myself been somewhat largely practically engaged in farming for many years, and with my brother been foremost in experimenting upon the capabilities of our fertile lands by raising successive crops of wheat on the same fields so profitably, I should have been much pleased to avail myself of so favorable an occasion to convey to the Association such views as have occurred to me. I consider the subject one of the very highest importance to the South, especially under *existing circumstances.* I have long believed that wheat growing has been too much neglected in the Southern States. I have no doubt that in many portions of the Southern country, more or less well adapted, the experiment has never yet been sufficiently made, but I hope and believe the time will soon come when the South will raise not only all the wheat needed for its own consumption, but a considerable excess for exportation. When that day arrives we shall really be independent, but not till then. In this fertile valley, the improvement in wheat growing since my boyhood is almost incredible. About that period red clover and plaster were introduced among us. By their application lands formerly regarded as second rate have become the most productive.

The system of seeding down annually only one-third of the cleared land or less in wheat has been abandoned, and now our usual custom is to sow out at least the one half, and many of us two thirds; so the old notion that it would not remunerate, and would eventually impoverish the inheritance, is completely exploded ununder the full lights of successful experiments. I have just finished seeding uplands in wheat, from which I have taken eight crops in the last nine years—first-two of wheat, second three of corn, then one of wheat, when I sowed clover in the wheat in the spring, allowing one year's rest, then fallowed in wheat, next year stubbled up, and I have the present season stubbled up again. My average crop of wheat upon these lands has been upwards of twenty bushels per acre, and of corn about 40 bushels per acre each year. I think

frequent and continuous experiments as to the time of sowing wheat should be made to learn the most eligible season to escape the fly, &c., and to insure the best crops. I thought it might not be deemed out of place or uninteresting to make these suggestions.

I am very respectfully
Your ob't serv't,
WM. LUCAS.

Scientific.

[FOR THE AMERICAN COTTON PLANTER.]

What shall we do to put a stop to the damages of the Caterpillar in our Cotton Fields?

For the consideration of the Agricultural Association of the Planting or Slaveholding States, and the Southern Planters in general.

BY PROFESSOR L. HARPER, L. L. D., ETC.

DR. CLOUD—*Dear Sir*—The damages done annually by the insect tribe to the agriculturists and horticulturists of the United States, are immense. In the Patent Office Report for 1849, they were estimated to the amount of twenty millions of dollars. This sum, enormous as it appears, is most certainly far behind the real amount; *fifty millions* of dollars will approach the truth much nearer. Very nearly three-fourths of that amount of damages are sustained by the agriculturists of the cotton planting States, Tennessee, North and South Carolina, Georgia, Alabama, Florida, Mississippi, Louisiana, Texas and Arkansas. A superficial glance upon the damage done by one single kind of insects, the larvæ of a certain night swarming butterfly, or Noctua, generally called the *boll worm*, in one single cotton planting State, that of Alabama, will soon convince us of the truth of the above assertions.

The boll worm, which makes its appearance generally in the first days of the month of August, is now a regular visitor of our cotton fields. It appears every year, if not all over the State, at least everywhere in the State in larger or smaller numbers. A hot and moist summer favors the insect, and keeps the bolls of the cotton plant, its exclusive food, tender for perforation and excavation. Its ravages are in such seasons the most enormous, and at hot and moist summers are, in the vicinity of the tropics of most frequent occurrence, the ravages of the boll worm are generally very considerable.

We are certainly within the limits of the truth if we estimate the average damage of the boll worm on the cotton crop of the State of Alabama to one-third of the whole crop. An average crop of this State amounts now to about 500,000 bales of 450 lbs. of cotton to the bale; but it would amount at least to 633,000 of such bales, if the boll worm did not destroy one-third of the crop. This insect diminishes the cotton crop of Alabama, therefore, to the extent of at least 133,000 bales of cotton annually. If we allow the price of cotton, the range of from five to ten cents only, certainly a very moderate one, the average value of a pound of cotton will be 7½ cts., that of a bale of cotton of the above weight, $33 75, and the average damage of the boll worm in the State of Alabama will annually amount to the very considerable sum of $4,483,750. If we estimate an average cotton crop of all the cotton planting States of our Union to be about three millions of bales, and the average damage of the boll worm one-third of this, the amount of the annual damage of this single species of insect all over the cotton planting States, will be thirty-three millions, seven hundred and fifty thousand dollars.

Who will say that this estimate is too high? Surely nobody who has once only examined a cotton field visited by that scourge of the Southern planter. Such, then, is the damage inflicted only by one of the enemies of the cotton plant—the worst, it is true, on account of its frequent and regular visits, but not the worst, if judged according to the extent of the injuries done in one of its visits, the larva of the Noctua Gorrypiperda, or the *Army Worm*, is then the worst, for it destroys everything which is destructible at the time of its visitation, and leaves the cotton fields as if the icy blast of a Canadian December morn had swept over the beds of the tropical plant. A few weeks—nay a few days—are sufficient to prostrate the hopes of the industrious planter.

If those dreadful enemies of our Southern Agricultural industry were only of temporary existence, if we could entertain the hope that they would disappear by degrees as they made their appearance, we might continue in idleness and wait patiently for their disappearance; but such is surely not the case. The close observer of nature can predict, without any prophetical genius, that these enemies of the cotton plant will not only not decrease, but that, on the contrary, they will increase. The same natural laws prevail in the vegetable kingdom as among mankind and the animal kingdom in general. As long as the population of a country is very thin, very few diseases only make their appearance, contagious diseases are nearly unheard of, but their number increases with the population, and among the densest population we find most diseases and the greatest mortality. It is the same among vegetables, for they, like animals, inhale and exhale air, and change the constitution of the surrounding atmosphere continually. It is especially so with the cotton plant. The culture of the cotton plant was first resorted to, to some extent in the United States, about the year 1780, but it was only in the year 1804, when the culture of the cotton plant had already increased to a considerable extent, especially in South Carolina and Georgia, that the larva of the larva of the Noctua Gorrypiperda, or Gorrypii, (the army worm,) made its first appearance and devastations. From the year 1804 to the year 1825 it reappeared several times, but without doing much injury. Since that time its ravages have been

frequent and extensive. I have no data with respect to the first appearance of the boll worm, but I know it was much later, and as the army worm evidently spread from East to West, having first appeared where most cotton was planted at that time, on the coast of South Carolina and Georgia, so the boll worm originated in the middle and western part of the cotton planting States, where its culture was, at that time, most considerable, and it spread especially from West to East. From 6 to 8 years ago the ravages of the boll worm were scarcely perceived in the Sea Island cotton fields, and, I believe, I make no mistake if I assert that it is only since about twelve or fifteen years that the damages caused by it became so considerable in the upland cotton fields.

The devastations and damages of these enemies of the cotton plant are now enormous, and, indeed, discouraging, as an examination of the cotton fields during the last months of August and Sept. will have put beyond doubt; it seems to become absolutely necessary to remain no longer inactive, but to attempt seriously to prevent such inroads of the enemies. The question obtrudes itself, then, "*What shall we do to decrease and prevent the enormous damages of the enemies of our cotton fields?*"

It is very certain, if we continue to do what we have hitherto done, discourse upon the enormity of the damages, curse the direful enemy, go even so far as to assert that we are willing to sacrifice hundreds, yea, thousands of dollars singly, if a remedy against the evil could be found, but let the caterpillar eat unmolested, the scourge will certainly keep pace with the culture of the cotton plant. It will fearfully increase with the increase of the plant, but only diminish when the culture decreases. The Patent Office Report of 1849 says justly: "If a pirate on the high seas, or an Indian savage on land, injures the property of a citizen to the amount of a few dollars, millions are expended, if need, to punish the offender. This is right! But when public enemies of a different name do a thousand times more injury to a whole country, are citizens then under any necessary restraint which forbids their making a *common* effort to protect their property from insect devastators?" Certainly not! and instead of looking in inactivity on the annual repetition of such enormous devastations, the common enemy ought to be made war upon, not singlehanded; no, by a common effort. The question will be put: "Can it be done effectually?" Why not? *there is a remedy for every evil;* such is the law of Nature; our activity and exertions are only required by the Allwise Ruler of Nature to find it out. An example will illustrate the assertion.

When the *small-pox* first appeared among the human family, thousands, yea, millions of men were hurried to the grave by that frightful scourge; whole cities and countries were depopulated, a remedy was despaired of, and safety was only sought in flight. By the exertions of skillful men the remedy has, nevertheless, been found, and the dreadful enemy of mankind is very nearly rendered harmless; not ten men die of small-pox now, where formerly hundred thousands used to die. So it will be with the scourge of our cotton fields, but no exertions have hitherto been made to discover a remedy. In order to find it the disease must be perfectly understood. We know, indeed, very little more of the boll worm than that it is the larva of a Noctua, (night swarming butterfly or moth,) which feeds exclusively upon the green fruit of the cotton plant; it perforates the green bolls, creeps into them, eats the interior of them, especially the immature wool, and destroys every boll which it touches. It undergoes the same changes as all the other Lepidapterous insects. The perfect insect, Sylpha, Butterfly or Moth, lays a large number of eggs, from two to three hundred, which hatch very soon after they are laid, and produce young caterpillars or larvæ, generally called boll worms; these feed upon the very young and tender cotton bolls, even when they are still surrounded by the flower. The young larvæ or caterpillars grow very quick, being so voracious as to eat in 24 hours more food than their own weight. They are soon able to attack larger cotton bolls, and then they devour whatever they can possibly perforate. When the caterpillars have attained their full size, and changed their skin 3 or four times, they leave the cotton plant and undergo a second transformation into chrysalids, nymphæ, puppæ or cocoons. In this state they take no nourishment. After having remained in this state a few days or weeks, they undergo the third and last transformation or metamorphosis, into Sylphæ or Butterflies, and the circle is complete.

That much we know from the analogy of other Lepidapterous insects and superficial observations,—but that is by no means enough for finding a remedy against the fearful increase of the boll worm. For that purpose it is absolutely necessary to know,

1. Where do these insects originate from?
2. Do they emigrate, or are they engendered by a generatio spontanea, æquivoca, (by spontaneous generation,) in the cotton fields and on the cotton plants?
3. Do these insects live during the winter or hibernate?
4. In what state do they hybernate as eggs, larvæ, chrysalids or sylphæ?
5. Where do they hybernate?
6. Where are they in the spring and summer until they make their visible appearance on the cotton plant?
7. Where do the Sylphæ or Butterflies lay their eggs?
8. When do the caterpillars generally make their first appearance?
9. What is the necessary state of the atmosphere for their appearance and increase?
10. What is the necessary state of the cotton plant for their appearance and increase?

11. Are there now years where no caterpillars or boll worms appear?

12. What substances or elements are necessary for their existence?

13. What elements do they consist of?

14. What substances or elements are hurtful to them, etc.

Not a single one of these questions can as yet be answered with any certainty, and it is, indeed, not an easy matter, as it will be perceived, to acquire sufficient information to answer them; this requires deep entomalogical and chemical skill, and a man's whole time and ingenuity must be devoted to these researches. But in that way, we may be certain *a remedy against the evil will be found out.*

In order to accomplish the above, and put a stop to the enormous ravages of the insect tribe in the cotton fields, I make the following suggestions for the consideration *of the agricultural public, and especially the Agricultural Asssociation and their Executive Council of the cotton planting States:*

1. Let the time of inactivity be at an end, and declare at once war to the common and unrelenting enemy.

2. Let the Agricultural Association of the slaveholding States and the special Agricultural Societies of each of those States and their Executive Committees, take at once the matter in hand, and direct operations.

3. Let them appoint at once an Entomologist and Chemist for each of the cotton planting States, but select men who are really skillful and reliable. Chemical knowledge is necessary in this case, for it will be requisite not only to analyse the cotton plant, and the soil in which it grows repeatedly, but an exact analysis of the boll worm, and even the atmospheric air, may be necessary.

The State Entomologist and Chemist can then serve for two purposes:

A. to devote his whole time, skill and ingenuity during the Spring and Summer months for entomological researches concerning the two enemies of the cotton plant, the boll worm and the army worm, and to solve the questions above alluded to.

B. to act at the same time, especially during the Winter months, as a *Chemist of the State*, and perform according to the resolutions of the Agricultural Convention of the slaveholding or planting States drawn up at their meeting in Montgomery, Alabama, on Monday, the 2d day of May, 1853, under the direction of the Executive Committee of the Agricultural Association of each of the slaveholding States, the analysis of soil, vegetable matter, manure, minerals, mineral water, etc., and have for that purpose a regular chemical laboratory in a central and accessible place of the State.

Such a State Entomologist and Chemist has not only an *arduous task* to perform, but he has to keep a very extensive and dear apparatus, and to provide himself with a private conveyance in order to travel to places where his presence is required; he will even find it now and then necessary to have an assistant; he must, therefore, have not only a *very liberal salary*, but also a certain sum for the purchase and preservation of a costly apparatus.

4. The salary of such a State Entomologist and Chemist, and the purchase and preservation of an extensive entomological and chemical apparatus, require annually a good sum of money, and the questi.n obtrudes itself, where shall the money come from. Nothing, really, is easier than to get the money for the above purposes. It would be wrong to lay any claims for that purpose to the State Treasury, for the employment of a State Entomologist and Chemist does not benefit the whole State—it benefits only a part of its inhabitants, the agricultural public; they have to pay it, and can do it with the greatest ease without even feeling it. I propose for that purpose,

5. Let every planter of the different slaveholding States pay from each bale of cotton which he makes the trifling sum of *two cents;* such a tax, trifling as it is for every individual, will amount in the State of Alabama, for instance, to very nearly $10,000 a year, and will be sufficient to pay the Entomologist and Chemist a salary of $5,000, sustain an apparatus, and have a handsome sum left for experiments, etc. In States where the cotton crop is not large enough, the tax must be higher. In order to enforce such a tax and collect it, it will be necessary to petition the Legislature to pass a law for levying such a tax, and have it collected by the tax collectors of the different counties. who may then pay it over to the Treasurers of the Agricultural Associations of the States.

6. As soon as all the States have appointed their Entomologists, they must meet at least twice a year, exchange their experiences, and form plans for operation.

Alabama raises the largest quantity of cotton. She has the greatest interest in the destruction of the enemy of the cotton plant. Let her take the lead in the above undertaking, and the other States will certainly soon imitate her example.

Eutaw, Ala., Sept. 12, 1853.

[FOR THE AMERICAN COTTON PLANTER]

Calcareous Fertilizers.

Dr. Cloud—*Dear Sir*—When in your part of the country, last Spring, I was particularly struck with the facilities for irrigation from artesian wells in some districts; and the abundance of green sand marl to be found cropping out on different parts of the river bank, and laid open by more than one railroad excavation. Yet I could not learn of one instance in which either of these most valuable auxiliaries had been put to a good use. There seemed to be so much of energy and activitivity amongst you, and so many well ordered and well

worked plantations, that I confess this neglect surprised me.

What glorious sights were some of these wells! Just think of it—hundreds of gallons of fine, pure soft water, pouring up from the bowels of the earth continuously, ready to be carried over every nook of those beautiful lying lands.

It was difficult to bear the tenth commandment in mind, I assure you! Those wells *were coveted.* I intend boring here within my nursery grounds, but hesitate to risk so great an outlay of time, labor, money and continuous care and attention upon so great an uncertainty.

However, to gossip of good intentions was not what I had in view in addressing you at this time. The readers of agricultural journals are already too often bored with mere twaddle, whilst subjects of positive importance are overlooked.

This *green sand marl* is one of these. I am not aware of its having been experimented with or analyzed in your State. When examining and testing the calcareous marls, so abundant in this district, and so little appreciated, I kept a sharp lookout for green sand, but without success.

The only States in which this valuable mineral has been used successfully are New Jersey, Delaware and Virginia. It has there been used to a great extent, and with most excellent results. Let me refer you to the 7th and 8th volumes of the "Farmer's Cabinet," published for many years in Philadelphia, but now, I believe, discontinued; and to the "Farmer's Register," for 1841, '2 and '3, established and for so many years edited and published by the now venerable Edmund Ruffin, a man who deserves more of his country than all the Generals that ever mounted epaulettes. You will there find very full descriptions of the marl-beds, the mode of working them, of applying the sand, and the results.

The marl region of New Jersey stretches through the interior of the State, and covers quite a large portion of it. The beds lie at various depths from the surface, and are variously overlaid. They also differ a good deal in the proportions of their constituents, their main value as a manure depending upon the proportion of potash and gypsum. I should suppose that the green-sand of your State must be especially rich in alkaline substances, not only from its appearance, taste and feel, but from the fact that several artesian wells I saw are so very alkaline as to be used for washing without the use of soap. A meadow of Bermuda grass, so located as to admit of being irrigated when needful, from such a well would yield the most profitable returns of any known crop, especially now that so many ingenious men amongst our Northern neighbors are turning their attention to the construction of mowing machines.

One valuable bed of green sand in New Jersey is thus described. See Farmer's Cabinet, volume 7, page 70.

"This in the hill, on either side of the stream, (Timber Creek,) is ten or fifteen feet in thickness, and is overlaid by four, five, or six, or eight feet of sand and gravel, and also by a hard material of a few inches thickness, resembling iron stone. This marl is much used, and to great purpose. It is hauled ten or twelve miles, and with the other marls of the neighborhood is generally spread as a top-dressing upon grass, in the spring, at the rate of ten to fifteen tons per acre." "It is sold by the rod, or by the ton, say ten to fifteen dollars per square rod, and the purchaser digging it himself, or 87½ cts. a ton, the owner uncovering it, and making it of easy access to the team." "The green sand marl of this neighborhood—and it is of that only we speak—is best adapted to what are often called *natural* meadows—to lowish, moist, hot drained lands—to cold, sour, quick sandy soils, where the springs are near the surface, and the virgin soil was naturally poor. These are the soils that this marl best suits We do not say it does not benefit some other soils; but from all we learned and from our own experience, it does little or no good when spread on grass on a light, sandy soil, and especially if the sandy soil reposes upon a sandy subsoil.

Mr. Ruffin, on the other hand, speaking, however, of green sand marl from a different locality, but similar, remarks, "As to the soils to which this manuring earth is suitable, all persons of whom I heard in Salem, agreed in the belief that it acted well on all soils fit for tillage, or grass land dry enough to make good manure or pasture. On loams, and on the more clayey soils the effect is best. It is supposed to be much less on the sandy lands. But the farmers about Woodstown do not agree in the opinion of those whom I conversed with in Gloucester, that the best green sand is inert, or nearly so, on very sandy soils." There is another general, if not universal accompaniment, which particularly attracted my notice, as I had seen and appreciated the same at home (in Virginia) in our green sand earth. This is gypsum which is left on the surface in a white, tasteless powder, like a dusting with coarse meal on the outside of the drying heap of earth. I learned that the workers and users of this earth, though not knowing what this white powder is, had formed the opinion that the appearance was most decided in the earths best for manure." I cannot but believe that this gypsum is an ingredient sufficiently abundant and general in most, if not all of these earths, to add very considerably to the other and unknown causes." The green-sand earth is generally given as top-dressing on clover, the autumn and winter after taking off wheat. The quantity of the green sand earth applied, is usually ten loads of a wagon and two horses, and when near and cheap enough, twelve or fifteen loads are often applied. Every man would prefer to give more but for the cost."

Some of the accounts given by Mr. Ruffin of the improvements effected by the use of this earth, are exceedingly interesting. And, by the way, you will excuse my remarking I am sure that a sett of the Farmers' Register

forms a most valuable library of itself for the planter aiming at improvement. The progress of the vast change effected in the agriculture of Virginia, almost from its inception, is here reported.

Of the green sand earths or marls of New Jersey, many analyses have been made. The following table exhibits the average composition of seven specimens, taken from as many different parts of the formation in that State, some of them widely distant from the other. The ingredients were seperated by mere mechanical means.

Green sand,	75.07
Clay,	20.93
Quartsoze sand,	4.00—100

From the results of 15 analyses of the green sand mineral itself, its own composition appears to be of

Silica,	49.5
Alumina,	7.8
Protoxide of iron,	22.8
Potash,	11.5
Water,	7.9
Lime, about	0.5
Magnesia,	a trace.

No mention is here made of the gypsum or sulphate of lime claimed by Mr. Ruffin to exist in the green sand, at which he expresses his surprise, but still claims its presence as an important agent.

It is difficult to limit an essay upon such a topic to the extent of a single article, which my press of other employments compels me to do.

Permit me merely to refer you to the following table of analyses of the cotton plant, seed and fibre, and to suggest how evident it is that this green sand earth, so rich in potash, must prove to be a valuable application to cotton lands. The test of actual application to the crop, however, is greatly to be preferred to that of the labratory.

Analyses made by the late Thos. J. Summer, of S. C., in 1848:

In the cotton plant, 100 parts of the ash contained of

Silicic acid,	6.50 per ct.
Sand and coal,	10.04
Oxide of iron,	8.20
Oxide of lime,	17.66
Oxide of magnesia,	5.33
Sulphuric acid,	1.31
Phosphoric acid,	18.37
Potassa,	22.01
Soda,	0.99
Chloride of sodium,	0.05
Carbonic acid,	15.72
	101.18

The ash of cotton seed contained

Phosphoric acid,	35.43 per ct.
Oxide of iron,	8.43
Coal,	1.05
Sulphuric acid,	3.19
Oxide of lime,	10.88
Oxide of magnesia,	10.61
Potassa,	27.82
Soda,	2.75
Silicic acid,	trace
Loss and chlorine,	4.84
	100.00

Professor Shepherd's analysis of the cotton fibre shows that every 10,000 lbs. of cotton wool produced by any tract of land, substracts from the soil, of

Potassa,	31 lbs.
Lime,	17
Magnesia,	3
Phosphoric acid,	12
Sulphuric acid,	1

These ingredients, or inorganic matters, when removed from the soil, can only be replaced by a direct application in some form or other.

Our marl here is a calcareous earth formed from the accumulation of the remains of myriads of fresh water shell-fish of various sizes and species, but generally small. It contains about 70 per cent. of carbonate, 6 to 8 of sulphate, and 2 to 8½ of phosphate of lime. I find it invaluable as an application to those portions of my nursery in which fruit trees are grown, acting both chemically and mechanically. Upon both cotton and corn the results have been favorable and decided. But for the reasons above given, I cannot at present enter upon this branch of the subject.

Yours truly,

THOMAS AFFLECK.

WASHINGTON, Miss., Sept. 20, 1853.

Plantation Economy.

[FOR THE AMERICAN COTTON PLANTER.]

All New Lights are not True Lights.

DR. CLOUD—*Dear Sir:* In the September No. of the Southern Agriculturist, a correspondent who signs himself "HEBRON" (a biblical name meaning society, friendship,) gives quite new light on the "Boll Worm and Sore Shin in Cotton." He closes, thus: "I know many who could, and perhaps would, impart much useful and practical information to the columns of the *Cultivator*, did they not expect to be taken off by the crabbed pens of "crusty critics." And perhaps "Hebron," as well as many others, and the rest of mankind, had better have a caustic pen held in terror over them, so that they would keep near the shore. All new lights are not true lights, and if writers would be careful enough to inform themselves upon what they would write, and try an experiment long enough to prove a thing to be not accidental, they would save "a shocking bad" way of spending ink and paper.

The idea that the boll worm is the cut worm is certainly new. I am free to admit that we are not fully informed as to the worm species that infest the cotton plant; but "Hebron" must know, as well as any one, if he is fit to enlighten this age, that if "the moth deposits its eggs upon the plant," that they are out of reach of pigs, and yet he ought to know that the cut worm is known all through the cotton region, and upon every farm and plantation, whereas the boll worm is not, nor has always been in cotton. A cotton field may be a cotton field, and yet "pigs between thirty and forty in number" may be able to gather all the cut worms; but how large a cotton field pray—an acre, or an half acre, or 20 acres?

But "Hebron" is not afraid of a "crusty" critic. He boldly ventures forth on the field of hypothesis, and attacks public sentiment as if it were some huge windmill. He is not content to make the boll worm the cut worm in a bran new dress, but he comes down on "Sore Shin," and avers "it is confined to poor land, more particularly to poor sandy land." Now, Sir, as to this hypothesis, I have not a foot of sandy land and not much poor land, yet I have the sore shin. And by-the-by, how many old planters will deny that the "sore shin" is not always worse in cold springs,—who will say that "too much rain produces lice upon the leaf," except our friend "Hebron." If we have much rain early in the season, there is cool weather, evaporation producing cold, when we find lice and sore shin.

I never saw a season yet without lice; and I rather guess in these latitudes there is no child without worms, yet lice do not injure the plant, when the weather is warm and the plant growing freely. "Lice never produce sore shins after the plant obtains a great many leaves." No, dear "Hebron," nor never. They are two separate and distinct curses on the cotton plant.—You may see patches of cotton, every plant lousy, leaves crumpled up, yet not a case of sore shin. And you may see plants with sore shin, the upper part of stalks not growing and the part in earth double size, yet no lice to hurt. And you may see both, for the plant in becoming checked in growth seems to be fitted for the nourishment of lice—they seem to increase more. "Hebron" hits on the idea—"It is confined to poor ridges, because it is slow in growth, and never subject to disease, less vigorous than that on rich land." I offer no hypothesis—prefer to acknowledge my ignorance. Yet I am inclined to think the boll worm is not the cut worm, because I have known cut worms to cut cotton in July and August—because sore shin is a disease of the plant at a particular spot—always near the earth, whilst the root will grow, and oftimes the top for a time until the plant can draw no further nourishment from the root.

I do not make these objections to fault find, but for a higher purpose, to correct error. "Hebron" would wield a "crabbed" pen of a "crusty" writer, could he, for his spirit is shown. I think he should evince more *friendship*, as his name imports. It is not always that the ablest writer on temperance is the most temperate, nor that the "crusty" writer has most malevolence in his heart.

Yours with respect,

AMITE.

[FOR THE AMERICAN COTTON PLANTER.]

The Pea Question.

DR. CLOUD—*Dear Sir*—A few years since the opinion generally prevailed that peas were poisonous to hogs, and having little experience I adopted it, made but few peas, plenty of corn, and allowed my hogs to run in the woods two-thirds of the year, lost more or less every year by disease, and raised a great many *runts*, which, upon examination, always proved to be diseased in the bowels or kidnies, or both. About this time it occurred to me that in witnessing the examination of several animals that had died suddenly, some of the smaller passages of the intestines were found completely clogged with unmasticated food, and never having detected any poisonous effects from the use of the pea, I attributed their unwholesomeness to this cause.

From that time I commenced planting more peas, and knowing that green peas would not swell, I always managed to admit the hogs to one field before the peas were ripe, always leaving the little nubbing and decayed corn in the field. I still lost some hogs, but could not attribute it to the peas.

I still increased my pea crop, and kept my hogs in the plantation the year round, occasionally sprinkling a little spirits of turpentine on their backs, and now disease appears to have almost left my stock, and a death rarely occurs, unless by violence. Last year my pea crop was abundant; I turned in my stock and fattening hogs in October; several sows brought forth about that time, and were suffered to run on them until the peas were exhausted, which was late in February, and I now have shoats from the above litters that will compare favorably with the best, and are decidedly superior to any that I have ever raised.

The process that has succeeded to my satisfaction is this: Sow the speckled or wild goose pea broadcast, when you lay by your corn, half bushel to the acre; pick your seed peas soon after taking your fodder, and give the second crop to your hogs, which will be in a ripening but not a swelling condition, early in October; there will be many ripe ones at that time, without doubt, but the hogs will prefer the green ones, and first fill themselves with them, which cannot hurt them as they do not swell, and after the first bite or two they will not eat so hurriedly and greedily. When it happens that we are prevented from putting our hogs in the field while the peas are yet green, we give them plenty of corn the first day or two, which appears to obviate all difficulty.

The same precautions observed makes the pea a most healthy and nutritious food for horses and colts, and I

find that colts may be weaned from their dam on a pea field, more particularly while the peas are green, with less loss than any other way that I have tried. I prefer the speckled pea, first, because stock are more fond of them; secondly, they are not so easily killed by the autumnal frosts, frequently escaping while other peas are killed; third, owing to their habit of bringing a partial crop in early, so that enough for seed may be gathered before the season for picking arrives, and if these are taken off, the same stems will produce another by the middle of October, land and seasons permitting.

H.

[FOR THE AMERICAN COTTON PLANTER.]

House for Preserving Sweet Potatoes.

DR. N. B. CLOUD—*Dear Sir*—Owing to my absence from home, your favor of the 7th inst. has just been received to-day, requesting "an article" on my plan of saving sweet potatoes. I presume it will now be too late for the object intended by you, (that is for the October number.)

If you think an experience of more than twenty years without a failure, will be a benefit to you or others, I most cheerfully give it, as I believe it the duty of every farmer to give for the benefit of others any improvement he may make, after he has properly tested the same.

My plan of saving sweet potatoes, is in a house built for the purpose, in the following manner: I dig out a place in the ground three or four feet deep, as large as I wish the house; then with bricks or rocks (I have had both) I build the walls eight or nine feet high, cover in the usual way with shingles or boards. For only one thousand bushels I prefer the house to be only twelve feet wide inside, and of sufficient length to hold that amount.

In each side have two windows at equal distances from the ends and each other; they should be about two feet wide and one foot deep. In these I put wire (such as is used in making sieves, to keep out rats, mice, or anything of the kind,) *but no shutters;* and in each end of the house a door large enough to pass in or out conveniently with the potatoes.

Above the potatoes there must be a floor or ceiling, as the cold will penetrate the roof, and cause them to freeze.

In housing I have not discovered that it makes any difference whether the potatoes are wet or dry, so there is no wet dirt sticking to them; but I prefer housing them in dry weather, before any freezes. Care should be taken to pick out all cut or defective potatoes. In putting them in the house, place a layer of boards or bark on the floor, and then straw. Be sure, also, to keep straw between the potatoes and the wall.

After the potatoes are housed, the doors must be left open every day for a week or two, (or until they cease to sweat,) also during warm spells in the winter, and occasionally in the spring and summer. The time for leaving the doors open is very easily told by their being wet. The greatest and almost only danger is in keeping them too close and warm.

The windows in the sides should be closed with straw in very cold weather; but this is rarely necessary more than once or twice during the winter. If you wish to house more than one thousand bushels, have the house some twenty feet wide in the clear, with a passage through it three feet wide, with enough partitions so that the air can pass freely through it; built in other respects as the above. All the potatoes my house will not hold I put in hills of about thirty or forty bushels, and use them first. I also keep my seed in hills the same size.

I believe the potatoes could be kept equally as well if the house was built above the ground, but the rats would be more likely to burrow under it.

By keeping potatoes on the above plan they never become spongy or pithy, and if proper attention is paid to the airing through the doors, they seldom sprout.

Very respectfully,

NELSON CLAYTON.

CHAMBERS COUNTY, Oct 18, 1858.

[FOR THE AMERICAN COTTON PLANTER.]

Peas will kill Hogs.

DR. N. B. CLOUD—*Dear Sir:* In the August No. of your excellent journal, is an article upon the subject of peas killing hogs. In said article your correspondent, not without some show of reason, would lead us to believe that it was the "hulls of unripe acorns," and not peas, that killed his hogs, which no doubt was the case with his hogs. But that "peas will kill hogs" is the sad experience of planters for years, and not hogs alone, but cattle also; but believing that they may be prevented from doing so with hogs, I am induced to give you my practice and experience on the subject, and if you think it worthy of a place in your periodical, you can insert. Some ten or twelve years ago I visited an old friend in the winter, and he would have me go to his pen to see his "porkers." In the pen was a trough that attracted my attention, as the corn was thrown upon the ground, and a nice spring branch was running through the pen; and upon enquiring about it, was told that it contained a quantity of ashes, salt, and a small portion of copperas, and then was filled with water, and the object was to free the hogs of kidney and intestinal worms, and he also said he believed that it would prevent *peas from killing hogs.* Soon after that time, I commenced farming upon a free, sandy ridge land, with a good deal of lime in the soil, and not being able to make an average of more than from 15 to 18 bushels of corn per acre, was compelled to plant peas extensively, to enable my corn to last me through the season. Now, my old friend's

trough never escaped my memory, but instead of using it (saving two or three years) made some log heaps of hickory, when it could be had, and if not convenient of oak, and set fire to them, and upon turning my hogs into the field threw a good quantity of salt upon the ashes of said heaps, not having used the copperas only when I used the troughs. Such has been my practice, and never have I lost any hogs from peas until last year, and then I was absent and too unwell, together, to attend to the heaping of the logs, and it was neglected. I lost some then, although a plenty of salt was given them. I raise so largely of peas as to be able to fatten my whole stock of hogs upon them during the winter. I have never but two or three times let my hogs upon my peas until they were fairly ripe. I have never lost any cattle from peas, and whether it was owing to their licking at the same bank of ashes and salt that my hogs did, am unable to say.

Having space I will tell you how the cotton crop of my neighborhood will be this year, as compared with last. It is obliged to be shorter. There is an occasional planter who will make as much as last year, but the majority will not make within one-third as much, at least so they report. My own crop has lost within a month at least a sixth of the grown bolls, from what seems to be the old fashioned rot. The same was in my crop last year, but not so extensively. What would you advise me to do to get rid of it? Can you enlighten me upon the nature and cause of said disease, or would you advise me to change my seed, as I have been planting the same kind for six or seven years without any change.

With respect your ob't serv't,

D. C. S.

REMARKS.—We have observed the same disease in cotton of which our correspondent complains. We have simply called it the "dry rot," without having investigated the subject atal. We have observed it the past season, and intended to give the subject some attention, but have been prevented by pressing engagements. We incline to the opinion that our correspondent would do well to change his seed; and we would further advise to plant cotton after grain, or a fallow of rest. We have noticed no appearauces of the disease in cotton where a system of rotation has been observed This disease was considerably complained of by planters in the southwest last season. It deserves and should receive attention.—[ED.

ANCIENT AGRICULTURISTS.—The first three men in the world, were a gardener, a plowman, and a grazier; and if any man object that the second of these proved a murderer, he will please remember, that as soon as he was so, he quit our profession, and began to build a town.

[FOR THE AMERICAN COTTON PLANTER.]

Yellow Clover.

DR. CLOUD—*Dear Sir*—In your September No. you request to hear from me on the subject of Yellow Clover.

I am gratified in the opportunity thus presented, as well as oblige you, as to place myself *rectus in curia*, as regards this plant.

I have had no experience with yellow clover, and for that reason have never felt authorized to recommend it. The use of my name in connection with it is rather accidental than otherwise. It happened in this way. During the Winter of 1851, a highly intelligent and respectable member of oor Agricultural Society at this place, informed me that he had recently come up the river from Mobile with Mr. Snedicor, who told him of his remarkable success with this plant, and further, that he had engaged a large amount of the seed of his growing crop, to be delivered the coming Summer and Fall. He stated, also, that he himself had engaged some of the seed, and from Mr. Snedicor's representations, he believed it would prove very valuable, and that he promised Mr. Snedicor that he would speak to me on the subject, and try through our Society to bring it before the public, as well for their benefit as Mr. Snedicor's. My special agency was solicited because I was acting at the time as Corresponding Secretary of the Agricultural Society, and believing from the statements, coming as they did from gentlemen of high standing, that it was a matter in which both the Society and the public were much interested, I lost no time in propounding certain interrogatories to Mr. Snedicor, to which he promptly and fully responded, all of which appears in the correspondence published in the September number of the American Cotton Planter. When these letters were read before the Society, it interested many of the members so much, as well as the community around, as to induce me to think that I might subserve a valuable purpose by giving the letters a wider circulation, to accomplish which, I forwarded them to the Southern Cultivator. A consequence to myself was, that numerous applications by letters for seed, and particular information as to planting, &c , &c., were from time to time received, all of which were referred to Mr. Snedicor. Thus and no further do I hold myself responsible for the failures with yellow clover, or claim credit for its triumphs.

That it has proved a valuable plant to Mr. Snedicor and many others, I cannot doubt. This is sufficient to establish its value under the prescribed circumstances of its successful cultivation.

Whether it is as valuable as many other grasses which can be successfully grown on natural or properly prepared soils, is quite another question.

So far as I am qualified to form an opinion, I greatly prefer red clover to all other clovers or grasses, regarding the amount and quality of food, and the length of time it admits of growing. The musquit, blue and or-

chard and herds grass, which I esteem next in value, are also successfully grown in certain localities even in our sunny region.

I refer you to the October number of the Soil of the South, for some of my experience with red clover.

With the warmest wishes for your success, I remain,

Yours truly,

I. CROOM.

GREENSBORO', Sept. 12, 1853.

[FOR THE AMERICAN COTTON PLANTER.]

Hill Side Ditching.

NO. II.

DR. CLOUD—*Dear Sir*—In my former article I spoke of the importance, practicability, and obligation of *Hill Side Ditching*. I promised in my next to speak of what I was disposed to term the true science of the same. I now undertake to comply with my promise.

In ditching and horizontalizing, the important questions are, first, can the land be made to retain all the water that falls upon it, without material injury to the growing crop? and secondly, if not, how shall the redundant water be disposed of with the least possible injury to the land? A satisfactory answer to these questions may be said to be the *true science* of *Hill Side Ditching*.

It is admitted that whenever water runs, however slowly, over land in cultivation, especially when planted in hoe crops, that it does it some injury. The injury, however, will vary according to the quality of the land. And in every instance, if the soil could be made to absorb all the water that falls, without injury to the crop, it would be abundantly the best. Therefore, the first thing to consider when we would perform the important work of hill side ditching is, whether this can be done? Where the land is not too rolling, and the clay is some distance below the surface, I presume it may be easily done. And it may be done where there is a stiff clay subsoil not more than 8 or 10 inches below the surface, by making large beds and planting 2 rows on the same bed. Though I doubt whether it would be practicable, for during those wet spells which we often have in the Spring of the year, the injury the crop would sustain the difficulty of cultivation with so much water standing on the land, must be considerable. Therefore, I opine that experience, the best guide, will prove that, in any but sandy lands, without a clay subsoil, the best plan will be to allow some of the water, during a very heavy rain, or in very wet spells, to escape. As to prairie-land absorbing all the water that falls, those who cultivate it will see at once that this is out of the question. The overflow of prairie-creeks will show the difference in this respect in prairie and sandy lands. How often do we hear of prairie-farmers complaining of their land being too level. The water cannot get off,—consequently of a very wet year nothing can be made. How fortunate, then, that land which will retain the least water, is least injured by the water running over it. The fact that the broken rolling prairie lands, while they last, are the best lands we have for cotton, is a striking proof of what I have said.

If our lands that we would horizontalize and ditch, cannot be made to absorb readily all the water that falls, then the important question arises, how shall we dispose of the redundant water? The answer to this depends upon the quality of the land, the declivity of the hill sides, the distance from the bottom to the top of the hill, &c. If the distance from the bottom to the top of the hill be not more than fifty or seventy-five yards, unless tolerably steep, then a ditch will be unnecessary, as the rows will drain the water off. But if the distance be greater, say one hundred yards, then a ditch or ditches become necessary. And if we are to have ditches, of course the distance to have them apart, and the fall to be given them, become important considerations. The distance to have the ditches apart, depends upon the declivity of the hill side. Where it is quite steep, they must be closer together, because the rows must have greater fall, as we shall presently show, the water will run off quicker, and consequently a greater number of ditches will be necessary to carry it off. I have made them from thirty to seventy-five yards apart. Of course the judgment of the operator must determine. As to the fall to be given the ditches, this also depends upon the nature of the land and the topography of the piece of ground. Ditches on prairie-land require to have a greater fall than on sandy land. This I know from actual experience. As, therefore, the fall of the ditches depends upon circumstances, no certain rule can be given. We must keep the leading idea in view, to get rid of the water without injuring the land. We must give the ditches fall enough to keep them from filling up, and not enough to make them waste into gullies. In prairie land the ditches may have a fall of from three to three and a half inches to the twelve feet. In sandy land they should not have more than from two to two and a half inches to twelve feet. Some recommend giving the ditch more fall at the upper end, and lessening the fall towards the lower end according to the length of the ditch. This is, probably, a good idea, provided the ditch be made large enough towards the lower end to prevent overflow. I have given my ditches about three inches to twelve feet, but where they are four hundred or five hundred yards long, I find that towards the lower end they are wearing too deep. My land is sandy, with a good clay foundation. I mention this, that others may commence where I have left off, and avoid the blunders I have made.

But how shall the rows be run? This is a question about which there is a greater variety of opinion than about the grade of the ditches. Some recommend running the rows parallel with the ditches. Then why have ditches at all? To catch and convey off the water when it breaks over the rows, say they. Then the very ditches argue an imperfection in the plan. If the rows were

accurately and judiciously laid off, they might convey off the water without the use of ditches; but there would be this grand objection to the plan—in many instances, the water would have to run along the rows for four or five hundred yards before it would be conveyed out of the field, and where water runs along a row with the ground fresh plowed up for this distance, it is bound to carry off a great deal of the most valuable ingredients in the soil. If water must be conveyed out of the field, the shorter the distance it runs, except in the ditches, the better.—I do not mean that it should run directly down the row in order to reach the ditch at the nearest point. This plan would do more injury to the land than the other.

Others put the rows upon a perfect horizontal. This will do, as I have before said, where the soil will absorb all the water. But where there are ditches, and, of course, a surplus of water to be conveyed off, with all due deference to the opinions of those who adopt this plan, I must say that, to put the rows upon a perfect level, is not according to the true science of hill-side ditching. The idea of water running over a row from end to end in a smooth sheet, as it would over a plank on a mill-dam, may look very well on paper, but it does not succeed so well in practice. The water breaks over in some place a little lower than any other, owing to the bed not being thrown up so high with the plow at this point, or from some other cause, rushes into the row below, which, being already full, breaks immediately below, the next row is broken in like manner, and so on until the ditch is reached, and, probably, the ditch is broken over in the same way; then the water rushes like an avalanche to the bottom of the hill, carrying soil and sand with it, to the great injury of the land. This I have tried. No guess work. In prairie land the water stands in the rows in little puddles for a long time after a rain, making it difficult to cultivate, and doing great injury to the growing crop.

Undoubtedly, then, the proper plan, nay, the scientific plan, is to drain the water into the ditches by the rows. It should, of course, be drained off as slowly as the nature of the piece of land will admit, as thereby less injury will be done to the fertility of the soil. If the rows had a fall of only half an inch to 100 yards, if the water would drain off and not break over the rows, it would be all the better. My plan, then, is to empty every row into the ditch immediately below, giving as little fall as possible. But, it may be asked, why have a ditch at all? Why to prevent the water from running too far along the row, accumulating and leaching the soil. But how much fall should be given to the rows? I have already intimated that this depends upon the declivity of the hill. I gave all my rows one and a half inches to twelve feet. I find in some places that this is barely enough. On a steep hill side the top of the row being very little higher than the alley immediately above, the alleys will hold but little water, consequently, unless the rows have considerable fall, they will break over. In other places I find that half an inch to twelve feet would have been plenty. I expect to change the grade of the rows in many places, and in future I shall vary the grade from ½ to 1½ inches.

I have gone through what I intended to say in this article. It is, I fear, too long, but I could not make myself understood in fewer words. All I want is to be understood. In my next I shall confine myself to the *modus operandi* of hill-side ditching, &c., and close my communication upon this interesting subject.

J. F. S.

BENTON, Sept. 20, 1853.

Horticultural.

Orchard and Garden.

HINTS FOR NOVEMBER.

ORCHARD.—With the exception of transplanting, there is very little work to be done in the orchard the present month. It will be well, however, to put a quart or two of ashes or lime around the base of young fruit trees, and to wash the trunks in soft soap to prevent the rabbits from barking them during the winter. Great injury is frequently done to young orchards from a neglect of this simple precaution. Cuttings may now be planted out, but unless the winter prove a mild one, this work had better be deferred till spring. In order to be successful with any sort of cuttings, it is necessary to plant them in deep, rich, well pulverized soil, leaving not more than an inch or so above the ground. Mulching during the following summer is almost indispensable, and unless rains be frequent they will need watering occasionally. All pruning should be done in spring or summer, except in the case of grape vines; this should not be deferred later than the first of February at farthest.

As before remarked, transplanting is the chief work of the month, and this should be attended to as soon as possible after the fall of the leaf. Directions for properly performing this most important of all orchard work will be found in another column.

GARDEN.—If the "hints" under this head, for the last two months, have been properly acted upon, there will be but little *new* planting now to be done. If, however, the Octobor plantings have been neglected, no time should now be lost in repairing the fault, if good vegetables are wanted early in spring. Peas, cabbage, radish, lettuce, spinach, &c., may yet be sown, but will need some protection in very severe weather. Onions, both the seeds and sets, may now be planted, as also carrots, parsnips, turnips, beets, salsafy, endive, celery, &c.—Transplant cabbage, lettuce, brocolli, &c. Dress asparagus bed with a thick coat of manure, to which a small quantity of salt should be added. Mustard sown now on

deep, rich soil, will make excellent "greens" during the latter part of winter and spring.

That portion of the garden intended for spring planting should now be heavily manured with strong stable or other unfermented manure, and deeply plowed or spaded immediately. This will put it in fine condition for working in February and March. It is absolute folly to expect a "good garden," in our hot and dry summers, unless the ground be *rich* and DEEP. With these *indispensable* qualities, and timely and proper planting, there is no country under heaven which can vie with us in horticultural productions, either as regards variety or quality.

[FOR THE AMERICAN COTTON PLANTER.]

Transplanting Fruit Trees.

DR. CLOUD—*Dear Sir:* As the time has arrived when those who design planting out fruit trees the present season should "be up and doing," perhaps I cannot do them a greater favor than by telling them how this very important work of transplanting ought to be done.

Of all the causes which have tended to retard our pomological improvement and success, none has exercised a greater influence than ignorance upon this very point.

A great many people imagine that nothing more is necessary in order to have a good orchard, than to procure the requisite number of trees, and to get their roots under ground with as little labor as possible! Time rolls on—their trees in general being left to take their chance with the "cuckle-bur," "block calis," and rabbits, become stunted in their growth, poor bearers of imperfect or worthless fruit, and immediately the fault is laid to the climate, and ours is set down at once as no fruit country! Occasionally we meet with a different order of things—with an orchard where the trees have been selected with judgment and planted out with care. And here, if the *after* treatment has been atal what it ought to be, we never fail to find the most satisfactory results.—No climate will suit all varieties of fruit, but if any man will select his trees according to the experience of some of our veteran experimenters in fruit-growing, and plant them out according to the following brief directions, giving them one quarter of the cultivation and attention that he does his cotton or corn-fields, and then has cause to complain of the want of success, all I have to say is that the ruling Divinity of Pomology will be more partial and capricious in the distribution of her favors than I have ever yet known her to be!

The first step towards the attainment of a good orchard is the selection of a suitable piece of ground on which to plant it. This, for the Apple, Peach, Quince, and Plum, should be dry and rolling, or at least sufficiently undulating to prevent the retention of stagnant water about the roots of the trees. (For Pears, the soil cannot be too deep and rich—*poor land will not do.*) Where this sort of ground cannot be had naturally, it must be made so artificially, by throwing up broad ridges from 20 to 25 feet apart, on the top of which the trees should be planted. The subsoil should be a porous clay, unretentive of excessive moisture, and in proportion as the opposite of this is the case, must the elevation of the ridges be. Unless the soil is already deep and well mellowed, it should be thoroughly subsoiled, as it is important that the roots of the trees shall have a chance of escape from the parching influence of our summer sun. The rows should be laid off 25 feet each way, which will give about 70 trees per acre. The holes should be dug sufficiently wide to admit all the roots of the tree in their natural positions, and *no deeper than the surrounding soil*, unless the land is new, and hence incapable of being subsoiled. In this latter case the holes should be dug to the width of 5 or 6 feet and not less than 2 to 3 feet deep, the bottom of which should be filled in with surface soil. In these holes the trees should be planted no deeper than they stood in the nursery. Unless the land is very thin and much worn, no "compost" will be needed about the roots, except the surface soil which has been removed from the hole. It is bad policy, I think, to force the growth of a young tree for a year or two and then suffer it to dwindle and perish for the want of its accustomed nourishment. Unless it is intended to give fruit trees the very best cultivation for a long series of years, stimulating composts of all kinds had better be dispensed with from the very outset. In soils destitute of a liberal share of lime and potash, however, a small quantity of lime or ashes, or both, should be applied not only to the soil immediately surrounding the roots when the tree is first planted, but annually thereafter—

increasing the area of the surface to which such application is made in proportion to the increased extension of the roots. In filling in the soil around the roots of the tree, great care should be used to have every root in its original position.—When the hole is two thirds filled, a bucket or two of water should be dashed in close to the trunk of the tree to settle the dirt well around the larger roots. Then fill up the hole, pressing the dirt gently with the foot, and if the tree be tall or destitute of spreading roots, stake it until it becomes firmly established.

N. B. It always happens that many of the larger roots are broken and otherwise mutilated in taking up trees. These broken and bruised parts should be carefully and smoothly pared with a sharp knife before transplanting, and if the trees have been long out of the ground and are withered, they should be *entirely* covered up in damp, well pulverized soil, and their roots well watered for two or three days before setting out. By this means we have saved nearly every one of a large lot of trees from the north, received here on the 1st of May, having been out of the ground nearly six weeks, and being so dried and withered as to be, in the estimation of nearly all who saw them, "past recovery." In proportion as the roots have been destroyed, so must be the pruning of the top, but this should not be done till the sap commences to circulate in the spring. I will only add that transplanting in this climate should always be done as soon after the fall of the leaf as possible, and if deferred till spring the trees should be occasionally watered and thickly mulched for two or three feet around the base.

I have written in haste and have no time to revise. Please, therefore, to excuse every and all short coming, and believe me as ever,

Yours cordially,

H. A. SWASEY, M. D.

Yazoo City, Miss., Oct. 11th, 1853.

Why Porous Soils are Warm and Adhesive Soils Cold.—The reason of this is, that water in porous soils passes off freely. causing little diminution of temperature by evaporation; while in stiff clay soils. the greater part of it is held till evaporated. Thus the larger portion of the calorific rays of the sun are absorbed by the water in the adhesive soils, and pass into the atmosphere in the form of vapors. This evaporation by the absorption of heat causes the clay soils to be cold and humid.

Grapes for the South.

THE Subscriber offers for sale about 30 dozen fine, well rooted **Scuppernong Grape Vines,** of two years growth. These Vines have been propagated by layers from a vine direct from Skuppernong river, of superior quality and unrivaled by any vine south of Tar river. These vines are warranted to bear the third year after being put out, and for 99 years in succession thereafter.

They can be had by application to me at La Place, or in the city of Montgomery at $5 per dozen, well put up, and securely sent to any part of the country.

October 1, 1853. DR. CLOUD.

J. A. & S. S. VIRGIN,

MACON, GA., AND MONTGOMERY. ALA.,

DEALERS IN


PIANOS, 
HARPS,

GUITARS, *STRINGS,*

SHEET MUSIC,

AND A

VARIETY OF MUSICAL MERCHANDISE,

GOLD AND SILVER WATCHES,

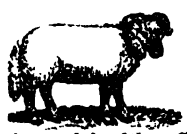
JEWELRY. SILVER AND PLATED WARE,

AND FANCY ARTICLES.

N B.—Watches, Clocks, and Jewelry repaired in the best manner.

April 1, 1853-6t

Saxon Merino Bucks.



THE subscriber has eight young Buck Lambs, of the above named fine breed of Sheep, and four of the same breed with a dash of the South Down. These Lambs are now four months old, of fine size, good condition and health. Gentlemen wishing to cross this fine variety of Sheep on their flocks, can have these at a small consideration above their market value for mutton. Price $10 each, deliverable at any time after the first day of September. If to be shipped, they will be delivered at Shorter's Depot, on the Montgomery and West Point Rail Road, in a good secure cage for which $1 will be required.

N. B. CLOUD.

SADDLERY.

F. A. ROBBINS & CO.,

CORNER WATER AND ST. MICHAEL STREETS,

MOBILE, ALA.,

DEALERS IN


SADDLERY,


INVITE the attention of *Merchants* and *Planters* to their extensive stock, comprising Saddles, Bridles and Martingales, Harness of every description, Leather of all kinds, Saddlery Hardware; Saddlers', Shoe-Makers' Carriage-Makers' Tools, Materials and Trimmings. Also, a superior article of Patent Stretched and Riveted *LEATHER BANDS,* for Cotton Gins, Mills, and Machinery, of all kinds that require Belts. All of which they offer for sale at *Low Prices,* wholesale and retail.

Mobile, July 1st, 1853-6t

Contents of this Number.

Manures ..... Page 321
Cooking Egg Plants 325
Wheat Culture at the South 326
Recipe for Washing and making Soap 328
Soiling Cattle and the best Plants for it 328
Peaches in Brandy 329
Strawberries at the South 330
Color of Plants 331
Scientific and Statistical 332
The "Hog Crop"—Profits of making—measuring corn, &c 333
Speed of Railways 333
Planting Strawberry Vines 334
Manure for Autumn Roses 334
Tubular Bridges 334
Hints to Gardeners 335
Soap Suds for watering Plants 335
Slitting the Bark of Trees 335
Hints to Stock Raisers 335
The South—Circular 336
Remedy for Burns 336
Rice Blancmange 336
Pickled Peaches 336

EDITORIAL NOTICES.

Work for the Month 337
Agricultural Association of the Planting States 337
Analysis of Soils 338
Georgia Wine 338
Who will respond? 338
Agricultural Association 339
Letter on Wool Growing 339
" " Wheat Growing 339

SCIENTIFIC.

Propositions for counteracting the ravages of the Boll Worm 340
Calcareous Fertilizers 342

PLANTATION ECONOMY.

All New Lights are not True Lights 344
The Pea Question 345
House for preserving Sweet Potatoes 346
Peas will kill Hogs 346
Yellow Clover 347
Hill-side Ditching, No. 2 348

HORTICULTURAL.

Orchard and Garden—Hints for November 349
Transplanting Fruit Trees 350
Why porous soils are warm and adhesive soils cold 351

THE SOUTHERN CULTIVATOR, is published on the first of each month, at Augusta, Geo. D. LEE, M. D., Editor, and D. REDMOND, Assistant Editor. *Terms:* $1 a year, in advance.

ALABAMA JOURNAL JOB OFFICE, PRINT.

Mississippi Nurseries,

LOCATED NEAR YAZOO CITY, MISS.

THE subscribers take great pleasure in announcing to their friends, and the public generally, that they have now on hand, and ready for sale, one of the choicest collections of **Fruit Trees** to be found any where in the South. Their assortment is very large and complete—the trees are healthy and well grown—and the prices as low as can possibly be afforded. The following are some of the leading articles with prices annexed:

Pears $1 each,....	$80 per 100.	Apricots	$1 each.
Apples 25c. each,	$20 " "	Nectarines	50c. "
Peaches 25c. "	$20 " "	Plums	$1 "
Strawberries, 50c. per doz.		Cherries	$1 "

All articles sent from the Nurseries are carefully labelled, securely packed, and delivered in Yazoo City free of charge. Orders to receive attention, must be accompanied by cash, or good N. Orleans, Vicksburg or Yazoo City reference, and addressed to the subscribers at Yazoo City, Miss.

N. B. Persons unacquainted with the different varieties of Fruits, would do well to state for what purpose the trees are wanted, and leave the selection to the proprietors.

Sept. 1, 1853-6m C. B. SWASEY & CO.

NO. 1 SUPER-PHOSPHATE OF LIME.

THIS valuable fertilizer has been used for several years in England and other parts of Europe, and next to Guano, holds the highest rank in popularity, and the extent to which it is used among farmers. Its introduction in this country has been more recent; but the progress it has made in the estimation of the public has not been less marked or successful than abroad. It is now entensively used throughout the Northern States, after a full trial and investigation of its merits; and it is rapidly becoming, like its predecessor, Guano, a favorite manure at the South and West.

It is composed of crushed or ground bones, decomposed by the addition of about 1-5 their weight of sulphuric acid, diluted with water, to which is added a due proportion of guano and sulphate of ammonia. The latter is the active and one of the most efficient agents in the best Peruvian Guano.

It is suited to any soil in which there is not already a full supply of the phosphates, which is seldom the case. All crops are benefitted by its application.

For sale in large or small quantities, in bags of 150 lbs. each. No charge for packages. All bags will be branded "C. B. DeBurg, No. 1 Super-Phosphate of Lime."

For sale at R. L. ALLEN'S Agricultural Warehouse and Seed Store, 189 and 191 Water-street, New-York.

Sept. 1, 1853-2t

Yellow Clover,

FOR WINTER PASTURAGE.

THE subscriber having grown the Yellow Clover successfully upon his Farm, knows it to be the article represented above, which is just the thing Planters in the South need. The reduced rates at which the Seed are sold, is a sufficient guarantee that no humbug is intended.

These Seed are to be had at the Drug Store of B. R. JONES & CO. The clean Seed are sold at $1 per pint, enough for one acre. In the bur 50c. per peck.

Sept. 1, 1853-tf B. J. SMITH.



A Monthly Journal, devoted to improved Plantation Economy, Manufactures, and Mechanic Arts

Vol. I. MONTGOMERY, DECEMBER, 1853. No. 12.

PROSPECTUS.

The American Cotton Planter
FOR 1854.

THE Second Volume of the AMERICAN COTTON PLANTER will commence promptly, and the first number be ready for delivery to subscribers, by the first day of January, 1854.

The very high favor in which the work has been received by the press of the country, and the extent of its circulation, for the first year, among the practical, intelligent planters and mechanics of the Cotton States, render an extended repetition of its merits unnecessary here. Suffice it to say that the Editor and Publishers have determined that the COTTON PLANTER shall be second to no periodical of the kind published in the United States, in no particular.

As heretofore it will be printed on book paper, purely white, made expressly for the work at the Rock Island Factory, with new fair type, on an improved Adams Power Press, securely stitched and neatly covered, thus protecting it entirely, into the hands of subscribers.

One fourth of each number shall be devoted invariably to the science of Agriculture, Geology, and Analysis, with the principles and theory of soils and manures.—The balance of the work will be devoted to practical Plantation Economy and Horticulture.

Our Horticultural department will be sustained by a gentleman of thorough practical experience.

In short we assure our friends and the friends of improvement in the Agricultural and other industrial pursuits of the Planting or Slaveholding States, that neither pains, industry, or expense, shall be spared to make the AMERICAN COTTON PLANTER the true exponent of the Planting interest of the country.

TERMS.

1 Copy.....$1 in advance.
6 Copies..... 5 " "
12 " .....10 " "

To Clubs, or Agricultural Societies, 100 copies for $75 to one address.

All subscriptions must commence with the volume, and the money must *invariably* accompany the order.

☞ Address, &c., on title page of cover.

From Hunt's Merchants' Magazine.

Commercial Benefits of Slavery.

To FREEMAN HUNT, *Editor of the Merchants' Magazine.*

DEAR SIR:—In discussing this subject apparent digressions will be made, owing to the intimate relations existing, and the dependence of Commerce on the stability of governments.

1. That the results of slave labor furnish the basis for Commerce, and that it cannot be furnished with constancy by any other description of labor.

2. The tendency which slavery has in giving stability to governments.

3. The contributions of slavery to national wealth.

To maintain the leading clause of the first proposition, we look to the statistics of those governments which exercise the most diffusing and powerful influence on Commerce; it is shown the articles of cotton, sugar, rice, and tobacco, (which are almost exclusively the products of slave labor,) constitute nearly two thirds of the exports of the United States; on the exports are mainly dependent the imports, from which is derived government revenue; hence those articles not only form the basis of external Commerce, but are the means through which two-thirds of her revenue is raised.

The product of slave labor is of acknowledged supremacy with Great Britian, not only as a commercial and manufacturing basis, but as a means of adding stability to the government, by furnishing employment to men, and money necessary for internal protection. Articles of merchandise giving healthful tone to the trade of these governments, must to a great extent, effect the Commerce of all with which they have intercourse; which

extends, directly, or indirectly, to the known world. To render slaves profitable, strict regard must be had to their health, comfort, and happiness; with these contributions, fidelity and usefulness will be the return under proper management.

The African race being the only one now recognized as slaves, in the full sense of the term, these remarks will pertain to such, although there are others, as virtually slaves, with the (supposed) mild and qualifying epithets of serfs, peon, apprentice, hirelings, servants, laborer, subject, tenant, debtor, &c., many of them with fewer allowed privilleges, under the penalty of dismissal or imprisonment, for neglect of duty, with the horrors of want to follow in their train.

As to the health of slaves, every one is aware of its importance, hence no remark is necessary. Comfort and happiness are so nearly synonymous, when applied to the slave population, that to add one the other follows, as a result. These blessing are to be conferred, by administering a well digested police, by keeping them employed in a climate and atmosphere adapted to their physical nature, to the extent of substituting moral employment and instruction for the vicious—inclinations and actions which are the legitimate fruits of idleness. The business of planting affords such employment and location.

Cotton, sugar, rice, and tobacco, can be produced for commercial purposes, only in a mild climate, and by such labor as can be controlled; to make a crop of either, and prepare it for market, requires the entire year's work; the least relaxation or neglect, in preparing the land, planting, cultivation, or gathering, insures defeat. Can such labor be found outside of Slavery? in other words, can these staples be produced by any other labor than such as can be sent to the field and compelled to stay there until a fair day's work is done, for a succession of years, which is necessary according to the present method of planting and the demands of commerce?

The experiment has been tried both in this and other countries, with strong inducements presented to laborers for their continuance in the business with the necessary energy, but without any thing like success, they prefering a change of employment, although want should be the consequence, rather than submit to the constant labor in the sun, which is essential for the production of these staples; although there is immense territory in the same climate with our own adapted to cotton raising, yet three-fourths of that which is used in Commerce is made by the well directed slave labor of the Southern States; and so far as the labor is involved the same may be said of sugar, rice, and tobacco. Curtail the supply of these four staples, to the extent that experience has proven would be the case if any other description of labor was to be relied on for their production, and what would be the condition of Commerce? War, pestilence, and famine, would not have such an effect on the world's prosperity; it is likely they would be confined to localities, but the other would be of world wide effect, not only by land, but by sea likewise; the affliction would not be confined to commercial communities, but every class would feel it; not alone those who are engaged in manufacturing these staples, they being thrown out of employment would crowd other professions, which would be the means of reducing wages below a living, besides the awful doom that would await the present operatives engaged in their production; as vagabonds they would wander on the face of the earth until the massess would be hunted down and destroyed by their more enlightened neighbors, as has been with some, and will be the fate of all the aboriginal tribes of America; thus the calamity would be diffused through every branch of business and every class of society; from the hamlet to the palace, its blighting effect would be felt. That Commerce is dependent on government for protection, no question will arise; a government, to enjoy the confidence of commerce, and be able to extend protection, must have stability, and that stability is dependent on the subordination of the mass of her population, which is regulated either by their intelligence or their privileges. The masses of almost every country are ignorant as to the requisites necessary to give form and stability to government; and in all that are densely populated, experience has proven the necessity of abridging the suffrage privilege, which some do by requiring a high property qualification, others by title and grade in society; by which means the mass of common laborers have equivalent privileges with absolute slaves in making laws to govern themselves or reform the government. By the concentration of power in the hands of those possessing an identity of interests, causing power and interest mutually to protect each other from encroachments by the masses, has given stability to many European governments of long standing. The evidence we have that it is this policy which has given them stability, is to be found in the case of those governments which, for a time, adopted the popular or republican form; such as France, Greece, Mexico, the States of South America, &c., where their stability amounted to a biennial change; falling into the hands of such as were able to secure the favor of the masses, independent of merit or the form of government to be administered when in power. Thus demonstrating that the republican form of government cannot be enjoyed by a people until educated in view of it, which can be done only by a system of general political education, conducted by liberty of speech and of the press; and the fact is not yet proven that they can be fully and safely tolerated among any other people than such as have been taught their use during the formation of national char-

acter. Yet their toleration is absolutely necessary to the formation and perpetuation of a republican form of government; hence it is the slave States of this Union that may be looked to for its stability; if not the dominant, the conservative power should remain in their hands.

The slave population precludes immigration to the extent of a dangerous adulteration, by supplying labor, which will preseve in its original purity a white population, which has inherited the free and safe use of speech and of the press, as a sure means of perpetuating this government, which was conceived and brought forth in view of the institution of domestic slavery. This species of property has the tendency to produce among those who are living in its midst, and are interested in its management, an identity of interest and feeling, a fondness for the same constitution and laws, that has been found to work well for Africa's once valueless and benighted sons, for their perpetual guardians the moral and commercial world. Although political aspirants, and other restless spirits, may arouse and array party feelings for a time, yet when the vital interests of the country are at stake, its constitution and laws, there is but one sentiment, although they may differ as to action; so long as a people entertaining sentiments in common on questions of goverment arising from its adaptation to their interests, and have power, there can be no danger of its stability, or of its commercial prosperity from within.

That the productions of slave labor adds largely to the wealth and power of the United States, is founded on the fact, that nearly three-fourths of her surplus production is the result of this description of labor; and it is only such surplus being thrown into commercial channels that can bring the wealth of other countries to this, (except by free gift,) which only could be considered a true addition or contribution to national wealth; all other means (strickly speaking) being the development of internal resources. Commerical preparations and wealth are necessary concomitants when a nation has to exercise offensive or defensive power; it is the surplus production that gives rise to such preparations, hence much of the wealth which is added from without, and of the power which enables her to command respect abroad, is referable to her slave institution either directly or indirectly. Much of this reasoning is applicable to other nations dealing largely in the products of slave labor, although they may disclaim the existence of positive or perpetual slavery within the pale of their governments. The true interest of every country is to encourage the useful arts, in view of the development of all of her natural resources; the idle waters, wild soil, things on the surface, hidden treasures beneath, and the air which sweeps above are her's for culture and improvement, by which the national character is magnified, and physical support increased for a much larger population. To effect this in every country, and keep pace with science, the labor of the world's population, properly directed, would be inadequate; yet much of this population is permitted to exist in as wild and dormant a state as the undeveloped resources are. There is no doubt but every man in a state of civilization, feels it his duty to be actively engaged, independent of the mere supply of his own necessities, in converting the dormant resources of the world into a tangible and realizable form for the world's progress, and it is only such that can take a retrospect and make claim to a well spent life. Now, if it is the national desire and ambition of civilized man to bring the things of earth to this state of usefulness, how much more so is it his duty to bring persons bearing his own physicial (and probably mental) image, purporting to have descended from the same common stock, who are by millions roaming on the earth's beautiful surface, as wild as the beasts of the forests, without any more moral culture or usefulness, ignorant of any proper appreciation of nature's gifts, and a terror to civilized man in attempting to introduce cultivation or improvement. All experience has proven, and all historical authority is corroborative, that the speediest and only method which has succeeded to any extent in bringing the heathen (proper) into a state of usefulness, is by placing them in contact with, and under the educated hand of civilization, until their wild nature and slothful habits shall be worn out, and a capacity for self government manifested, although it should require thousands of years to effect it.

This work of usefulness is to be commenced by the civilized countries permitting, by law, their own and the population of each other to obtain, by purchase or capture, of the world's heathen, as many as they can profitably employ, to be perpetual slaves, with proper enactments for their treatment. There is very little doubt but the first governmental opposition to this once noble and praiseworthy license for doing good to the heathen, originated in the short sighted apprehension that there would not be room in the civilized portion of the world for the well doing of their own surplus population; but let them fear not, science will develop employment as fast as population can grow in all time to come; and selfish considerations should not be tolerated with such an amount of good in prospect. The ostensible objections raised against slavery are its attendant cruelties and immoralities; but they are blessings when compared with such as are practiced in their native condition; some of which are the scarifying of infant's cheeks, that pain may result when they attempt to express their wants by crying, selling each for a trifle in return, regardless of their future lot, torturing themselves and one

another under the dominion of superstition, by burying alive, the funeral pile, Juggernaut's car, &c., but that which is the worst of all is canibalism. Think of the number of fat babies and sprightly youths of their own people, besides the unfortunate strangers that are eaten; with these historical truths before us it would be blind prejudice to compare the horrors of heathendom with the necessary penalties of slavery, which are never carried further than to secure subordination to the reasonable government of civilization, which brings with it benefits, individual and general, which are unknown in heathendom. If enlightened governments were to take this view of the heathen's condition and act, leaving the semi-civilized nations as the field for Christian effort and benevolence, what would be the effect? The enterprise and progress of the age would call into requisition many-fold the number that are at present engaged in the efficient school of civilization, and the odium which is attached to the epithet slavery would be lost in view of the mutual benefits accruing to the heathen and his enlightened instructors through this humane institution. If the labor of the present number of heathen that are employed in the moral arts has produced so good an effect on the world's commerce, as has been shown, we would expect any multiplied number to produce a proportionate effect; the ocean highways between commercial nations would be so crowded with merchantmen that their canvass would never be out of each other's sight, bearing the valuable products of slave labor. Bearing on this subject is appended a transcript of the protest resolutions of Wellington, St. Vincent, Penshurst, and Winford, presented to the British Parliament on the 20th August, 1833, against the third reading of the slavery abolition bill.

DISSENTIENT.

"1. Because it is attempted by this bill to emancipate a nation of slaves, not prepared by a previous course of training, education, or of religious instruction, habits of industry, or of social intercourse, for the position in which they will be placed in society.

"2. Because the value, as possessions of the crown of Great Britain, of the colonies in which these negroes are located, as well as the value of these estates to the proprietors, and colonists, depends upon the labor of the negroes to obtain the valuable produce of the soil, sugar, whether as slaves, as apprentices, or as free laborers for hire.

"3. Because the experience of all times, and of all nations, particularly those of modern times, and in our own colonies, and in St. Domingo, has proved that men uncivilized, and at liberty to labor or not as they please, will not work for hire at regular agricultural labor in the low grounds within the tropics; and the example of the United States, a country but thinly peopled in propotion to its extent and fertility, and always in want of hands, has shown that even in more temperate climates the labor of emancipated negroes could not be relied upon for the cultivation of the soil; and that the welfare of society, as well as that of the emancipated negroes themselves, required that they should be removed elsewhere.

"4. Because the number of negroes on the several islands and settlements on the continent of America in which they are located, is so small in proportion to the extent of the country which they occupy, and the fertility of the soil is so great, and the climate (however insalubrious and little inviting to exertion and labor) is so favorable to vegetation and the growth of all descriptions of the produce of the earth, that it cannot be expected that these emancipated slaves, thus uneducated and untrained, will be induced to work for hire.

"5. Because, upon this speculation depends the value of a capital of not less than 200,000,000 sterling, including therein the fortunes and existence, in a state of independence, of thousands of colonists and proprietors of estates in the colonies, the trade of the country, the employment of 250,000 tons of British shipping, and of 25,000 seamen, and a revenue which produces to the exchequer, upon sugar alone, not less that 5,000,000 sterling per annum."

WM. S. PRICE.

From the Patent Office Reports.

Manures.

(CONTINUED.)

We could keep our fields in a constant state of fertility by replacing every year as much as we remove from them in the form of produce; but an increase of fertility, and consequent increase of crop, can only be obtained when we add more to them than we take away. It will be found that, of two fields placed under conditions otherwise similar, the one will be most fruitful upon which the plants are enabled to appropriate more easily, and in greater abundance, those contents of the soil which are essential to their growth and development.

It will now be easily understood that, for animal excrements, other substances containing their essential constituents may be substituted. In Flanders, the yearly loss of the necessary richness in the soil is completely restored by covering the fields with ashes of wood or bones, which may or may not have been lixiviated, and of which the greatest part consists of the phosphates of lime and magnesia. The great importance of manuring with ashes has been long known by agriculturists. Now, bone manure possesses a still greater importance in this respect. The primary sources from which the bones of animals are derived are hay, straw, or other substances used as food. If we

admit that bones contain 55 per cent. of the phosphates of lime and magnesia, and that hay contains as much of them as wheat straw, it will follow that eight pounds of bones contain as much phosphate of lime as 1,000 pounds of hay or wheat straw, and two pounds of it as much as 1,000 pounds of the grain of wheat oats. These numbers express pretty nearly the quantity of phosphates which a soil yields annually on the growth of hay and corn. Now, the manure of an acre of land with 40 pounds of bone dust is sufficient to supply three crops of wheat, clover, turnips, &c., with phosphates. But the form in which they are restored to a soil does not appear to be a matter of indifference; for, the more finely the bones are reduced to powder, and the more intimately they are mixed with the soil, the more easily are they assimilated.

Experiments on bones, as a manure, were made long before their use was extensively adopted, and these, in general, were attended with a very favorable result, in conseqnence of the bones not being broken into sufficiently small pieces, or being put upon the land in too fresh a state; but since the proper use of them has been ascertained, the advantage of this article as a manure, in distant and uncultivated spots, where the carriage of common stable-manure would have been too expensive, and where it could not be made for want of food or cattle, is incalculable. By means of bones large tracts of barren heaths and sands in Great Britain have been converted into fertile fields.—The bones are broken into different sizes, and are accordingly called inch bones, half-inch bones, and dust. Most of the bones used in England—which are procured from the large manufacturing towns—have undergone the process of boiling, by which the oil, and a great part of the gelatine which they contain have been extracted. At first sight we should be led to imagine that, having lost much of the rich animal matter which they contained, they would be proportionably less effective in the soil. This, however, seems not to be the case, as experience has shown that, while little difference can be observed, many give the preference to those from which the oil and glue have been extracted; in fact, from late experience it has been found that bones act more speedily and efficaciously after being boiled. But oil and glue form excellent manures. This is explained by the fact that bones do not furnish much nourishment to the roots of plants until they have undergone a certain degree of decomposition; the fat and the gelatine, being intimately blended with the bony matter, and contained in cavities or cells, may remain a long time in the earth without decomposition. As a proof of this, it has been found that bones which had lain in the earth for many centuries, on spots where ancient battles had been fought, afforded, on analysis, nearly as much gelatinous matter, by the abstraction of the earthly parts, as fresh bones would have done. It would seem, therefore, that the great effect of bones, as a manure, must depend on the phosphate of lime, and the effect of bone ashes seems to strengthen this opinion. A close examination of the fields manured with bones has led to a surmise that much of their importance depends upon the mechanical texture of the bone, and on its power of absorbing and retaining moisture; for if a plant which vegetates with peculiar vigor in a field manured with bones be pulled up, it will be almost invariably found that small pieces of bones are attached to the roots; and when these are minutely examined, the smaller fibres of the roots will be found to have grasped them and to pervade their cavities, always more or less moist. The moisture, then, and a small portion of the remaining gelatine dissolved in it form the food on which the plant has thriven. The more the bones have undergone fermentation, the more soluble the gelatine will be. In its fresh state it is only soluable in very warm water, and the oil repels moisture. This accounts for the seeming anomaly of the superiority of boiled bones, since by this process they have undergone a fermentation; the residue, although not deprived of all its animal matter, is much more porous, and will imbibe and retain moisture. The food of the plants is here ready prepared and dissolved, and kept in store without being in danger of being washed through a porous soil, or being evaporated by the heat. The solid substance, which is chiefly phosphate of lime, has a stimulating effect, and assists that of the more soluble parts; but phosphate of lime is not soluble in water, and does not decompose readily in the earth, and it therefore acts slowly upon the roots of crops, to which it is applied as a manure. Dr. Liebig's great discovery—that oil of vitrol, (sulphuric acid,) if mixed with bones, would take to itself a part of this lime, leaving behind a new salt containing at least a double portion of phosphorus, and therefore called super-phosphate of lime—was founded upon correct analysis. This salt being readily dissolved by water, he hoped would afford a more digestible food for root crops; and the result has answered his expectations. Hitherto this mixture has been applied as a liquid manure, diffused sometimes in fifty times its bulk in water. This process, however, was found too dedious and expensive.

The methods now adopted by artificial manure-makers in England, and by large farmers, are as follows—premising, however, that coarse bone-dust is preferred, and the ingredients are mixed in a brick tank in the ground, some eight feet long by four feet wide, with a depth of from eighteen to twenty-four inches, the rakes and shovels employed being of copper: to any quantity of bone (not more than fifteen hundred weight should be mixed at a time) put into this tank, half its weight in oil of vitrol should be gradually added. This will soon begin to heat, seething violently,

and sending out a great deal of steam, with a peculiarly offensive stench; presently the whole mixture will wear the appearance of a boiling mass and swell greatly from the escape of gas.—This mixture, from the time of the pouring in of the vitrol, should be continually raked about, so that every particle of the bone may be dissolved by the acid. Great attention should be paid to this. In a short time the bones will disappear altogether; and when it has been raked until it gets so thick that it can be worked no longer, it should be shovelled out on to the ground, where, in the course of a day or two, it will become quite dry, and may then be broken up into powder and put on the land. It will be found necessary, if the bone is dry when put into the tank, to add seven or eight pailfuls of water, and mix with the bone, before pouring in the acid. In England super-phosphate of lime is used to a very great extent as a manure for turnips, and scarcely any other manure could produce such results. The best mode of applying it is to sow it broadcast, at the rate of from four to five hundred weight per acre, harrowing it in, that it may not come in contact with the seed.

Night Soil.—In respect to the quantity of nitrogen contained in excrements, 100 parts of the urine of a healthy man are equal to 1,800 parts of the fresh manure of a horse, and to 600 parts of that of a cow. Hence, it is evident that it would be of much importance to agriculture if none of the human urine were lost. Its disagreeable odor; its erroneous modes of application, either in such excessive quantities, or mixed with other composts in such proportions that its powers could not be distinguished in the mass; its semi-fluid nature, requiring for its removal carriages of a peculiar construction; and several other minor obstacles, have rendered its use infrequent in most countries.

The powerful effects of urine as a manure are well known in Flanders, and they are considered invaluable by the Chinese, who are the oldest agricultural people. Davis, in his history of China, states that every substance convertable into manure is diligently husbanded. The cakes that remain after the expression of their vegetable oils, horns and hoofs reduced to powder, together with soot and ashes, and the contents of common sewers, are much used. The plaster of old kitchens, which in China have no chimneys but an opening at the top, is much valued, so that they will sometimes put a new plaster on a kitchen for the sake of the old. All sorts of hair are used as a manure, and barbers' shaving are carefully appropriated to that purpose. The annual produce must be considerable in a country where some hundred millions of heads are kept constantly shaved. Manure of all animals, but more especially night soil, is esteemed above all others.—Being sometimes formed into cakes, it is dried in the sun, and in this state becomes an object of sale to farmers, who dilute it previous to use.—They construct large cisterns, or pits, lined with lime plaster, as well as earthen tubs, sunk into the ground, with straw over them to prevent evaporation, in which all kinds of vegetable and animal refuse are collected. These, being diluted with a sufficient quantity of liquid are left to undergo the putrefactive fermentation, and then applied to the land. In the case of everything except rice the Chines seem to manure the plant itself rather than the soil, supplying it copiously with their liquid preparation.

The Chinese husbandman always steeps the seeds he intends to sow in liquid manure until they swell, and germination begins to appear, which experience has taught him will have the effect of hastening the growth of the plants, as well as of defending them against the insects hidden in the ground in which the seeds are sown. To the roots of plants and fruit trees liquid manure is also applied. The business of collecting urine and night soil employs an immense number of persons, who deposit tubs in every house in the cities for the reception of the urine of the inmates, which vessels are removed daily with as much care as our farmers remove their honey from the hives. Indeed, so much value is attached to the influence of human excrements by these people that the laws of the State forbid that any of them should be thrown away; and no other manure is used for their corn fields.

China is the birth-place of the experimental arts. The incessant striving after experiments conducted the Chinese a thousand years since to discoveries which have been the envy and admiration of all nations for centuries, especially in regard to painting and dyeing, and to the manufactures of porcelain, silk, and colors for painters. Those we were long unable to imitate; and yet they were discovered by them without the assistance of scientific principles; for in the books of the Chinese we find recipes and directions for use, but never explanations of processes.

Half a century sufficed to Europeans not only to equal, but to surpass, the Chinese in the arts and manufactures; and this was owing merely to the application of correct principles deduced from the study of chemistry. But how infinitely inferior is the agriculture of Europe to that of China! The Chinese are the most admirable gardeners and trainers of plants, for each of which they understand how to prepare and apply the best adapted manure. The agriculture of their country is the most perfect in the world, and yet very little value is attached to the excrements of animals.

If we admit that the liquid and solid excrements of man amount, on an average, to one and a half

pound daily, and that they contain three per cent. of nitrogen, then in one year they will amount to 547 pounds, which will contain nearly 17 pounds of nitrogen—a quantity sufficient to yield the nitrogen of 800 pounds of wheat, rye, oats, or of 900 pounds of barley.

This is much more than it is necessary to add to an acre of land in order to obtain, with the assistance of nitrogen absorbed from the atmosphere, the richest possible crop every year. Every town and farm might thus supply itself with the manure, which, besides containing the most nitrogen, contains also the most phosphates; and if rotation of the crops were adopted they would be most abundant. By using at the same time bones and the lixiviated ashes of wood, the excrements of animals might be entirely dispensed with.—Except another powerful manure, produced by the herring-oil-works' refuse, none can come into competition for richness with the contents of the privy mixed with urine. The effects of this manure no doubt diminish gradually, yet its operation may be plainly perceived in the fourth successive crop. When human excrements are treated in a proper manner, so as to remove the moisture which they contain without permitting the escape of the ammonia, they may be put in such a form as will allow them to be transported even to great distances. This is already attempted in many towns in England; and the preparation of night soil for transportation constitutes not an unimportant branch of industry. But the manner in which this is done is very injudicious.

The excrements are preserved in the houses in open casks, from which they are collected and placed in deep pits, but are not sold until they have attained a certain degree of dryness, by evaporation in the air. But whilst lying in the receptacles appropriated for them in the houses, the greatest part of their area is converted into carbonate of ammonia; lactate and phosphate of ammonia are also formed, and the vegetable matters in them putrify; all their sulphates are decomposed, whilst their sulphur forms sulphuretted hydrogen and hydro-sulphate of ammonia. The mass, when exposed to the air and dried, has lost more than half of the nitrogen which the excrements originally contained; for the ammonia escapes into the atmosphere along with the water which evaporates; and the residue now consists principally of phosphate of lime, with phosphate and lactate of ammonia, and small quantities of urate of magnesia and fatty matter. Nevertheless, it is still a very powerful manure; but its value, as such, would be twice as great if the excrements, before being dried, were neutralized with a cheap mineral acid.

In other manure manufactories, the night soil, while still soft, is mixed with the ashes of wood, or with earth, both of which substances contain a large quantity of caustic lime, by means of which a complete expulsion of all its ammonia is effected, and it is completely deprived of smell. But such a residue, applied as manure, can act only by the phosphates which it still contains; for all the ammoniacal salts have been decomposed, and their ammonia expelled.

A patent has been taken by a manufacturer in London for the preparation of this useful manure, which states, in its specification, that the night soil is mixed with calcined mud and finely-divided charcoal. By this means the smell is completely and instantaneously removed, and the ammonia retained by virtue of the affinity which alumina and charcoal exert for that compound. This plan is both simple and efficacious, but the ammonia is apt to be expelled by the application of the heat employed in drying the manure. The addition of a cheap mineral acid to the night soil, before admixture with these ingredients, would materially improve the process. Perhaps the best and most practical method of fixing the ammoniacal salts of urine and night soil is to mix them with the ashes of peat or coal. When the latter are employed, care must be taken to select such as are of a porous, earthly consistence. The ashes, both of peat and coal, contain, in general, magnesia; hence their value as an ingredient of prepared night soil. The night soil should be mixed thoroughly with the ashes, and exposed to the air to dry. The disagreeable smell is thus quickly removed, and a pulverulent manure obtained, which can be applied to the fields with facility.

(To be continued.)

From the Southern Cultivator.

The Economy of Insects.

In 1849, after a pretty extensive and thorough examination of the subject, we estimated in the Patent Office Report of that year, the damage annually inflicted by insects on the farmers and gardeners of the United States, at twenty millions of dollars. Subsequent inquiries and researches have led us to believe that the estimate is too low; and there is reason to fear that various causes, little understood by the public, are at work to augment the destructive ravages of insects in many districts of this extended republic. These causes, and the economy of this large class of animals ought to be more discussed in our agricultural journals, that some means may be devised for abating the evil, if we cannot wholly prevent it. That insects should be allowed to riot on the fruits of our fields, orchards and gardens, without any common and earnest efforts to destroy them, has always appeared to us as a most extraordinary fact. Hence we said in the Report aboved named that, "If a pirate on the high seas, or an Indian savage on land, injuries the property of a citizen to amount of a few dollars, millions are expended, if need be to punish the offender. This is right.

But when public enemies of a different name do a thousand times more injury to a whole country, are its citizens under any necessary restraint *which forbids their making a common effort to protect their property from insect devastators?*"

No such effort has ever been made by American farmers; and we respectfully ask why it has not? As we have often said, "if farmers fold their arms and say that nothing can be done by the science of entomology, or by any other means, what but an increase of the evil can be expected? Not to try to escape the infliction, is to treat one's enemies with unmanly forbearance, and evinces a belief in fatalism worthy of a desiple of Mahommed."

KOLLAR, a distinguished German entomologist, says that "the whole number of the species of plants and all the classes of other animals taken together, cannot, according to the latest estimates, equal in amount the species of insects, as we reckon about three hundred thousands species." As illustrative of the extreme fecundity of insects, the same author says that the female of the white ant lays forty thousand eggs. With such incredible powers of reproduction, and with an average of three distinct species of insects to every species of plants on the globe, nothing would seem more obvious than the speedy destruction of the latter, if insects were not by an element in their economy, self-consumming animals. This is not true of every species; but the number of insect-killers of which spiders, ants and ichneumunidæ are types, bears a wise and salutary proportion to all the other desolating tribes.

It was not long since that we saw a score of black ants attack, cut off one wing so he could not fly, and then kill to feed themselves and their young, the beetle, whose larva is the destructive cut-worm in our corn fields. On the other hand, beetles, which so abound in the Southern States, feed mostly on the pupæ and larva of moths and butterflies deposited in the ground. As the study of entomology has received little attention among agriculturists, perhaps a few introductory remarks ought to be made, explaining some of the technical terms necessarily used in this department of natural history.

The word *insect* means cut into, from the Latin *insecare* to cut or notch. If you examine an ant, a bug, or honey bee, you will find its head joined to its thorax by a small ligament, and the thorax joined to the abdomen in a similar manner.—There is one order, *myriapoda* (thousand legged worms) which is an exception to the general anatomical structure of insects. All insects propagate by eggs, but in a few tribes the eggs are hatched before they leave the body of the mother.

In the locust (very common in Maryland and Virginia) seventeen years itervene between the laying of the eggs of the insect and its maturity; in other orders and species, a few days, and perhaps hours, suffice for the full development of a new generation. When an egg is hatched, if the offspring has no feet, it may be called a maggot or a grub; if it has feet, it is called a worm; but whether worm, grub or maggot, it is a *larva*.—*Larvæ* is the plural of *larva*. It is in this stage of their existence that nearly all insects grow, and necessarily consume food in proportion to their growth. The larvæ of locusts doubtless grow very slow, for the insect is 17 years in the ground; while the maggots of the common flesh-fly add 200 fold to their weight in 24 hours.—After young larvæ have obtained their full size and age, they experience a sudden and remarkable change, by acquiring a hard and often transparent shell, and becoming apparently dead. In this stage of their development, insects consume nothing, and are called *pupæ*, nymths, and chrysalids. At the proper time, the investment of the young is ruptured, and it emerges with wings, legs, digestive, respiratory and sexual organs fully develloped, or nearly so. It is now an *image* or a perfect *image* of its race.

KOLLAR,* whose arrangements we are inclined to adopt in this brief essay, divides insects into twelve orders, as follows: Eight orders have wings, namely:

1. COLEOPTERA (Beetles) with six feet, and mostly four wings the anterior pair of which are horny and cover the two posterior ones, which are sometimes wanting. They have upper and lower jaws, (called *mandibles* or *maxillæ*) for gnawing and chewing. Weevils, May-bugs, stag-beetles and ground-beetles belong to this order.

2. ORTHOPTERY—This order is closely allied to the *coleoptera*, having six feet, four wings, the two anterior are of a leathery substanee, serving as covers to the posterior ones, which are folded both longitudinally and transversely, but more generally only longitudinally. In the first order, the under wings are transversely folded. (To the student, these apparently trifling distinctions are important.) Orthoptera have both upper and lower jaws for chewing. Grasshoppers, migratory locusts, field crickets, cockroaches, and black beetles belong to this order.

3. HEMIPTERA—Insects of this order have six feet four wings, the two anterior forming hard coverings with membranous ends, or resembling the lower ones, but being longer and stronger.—Instead of the upper and lower jaws, mandibles or maxillæ) the organs of the mouth are formed of bristles, which are so arranged as to form a sucker, and which is inclosed in an articulated sheath, consisting of one piece of a cylindrical or cenicle shape, and forming a projecting peak. Aphides, (plant lice) tree bugs, cicadæ, and bed-bugs, although wingless belong to this order.

*The arrangement of winged orders is that of Latreille. The other orders are based on the mandipulated and suctional form of the mouth, as described and adopted by distinguished Entomologists.

4. NEUROPTERA.—Six feet four naked membranous wings, upper and lower mandibles for chewing; the wings are delicately veined, and the under pair are nearly the size of the upper, or even longer in diameter. *Examples*—the dragon-fly, or *libellula;* lice-fly, or *hemerobious;* and the day-fly, *ephemera.*

5. HYMENOPTERA.—Six feet, four membranous naked wings, upper and low jaws; the posterior wings smaller than the upper. In the abdomen of the female of most species is a sting or ovipositor. *Examples*—the saw-flies, gall-fly, honey-bees, wasps, humble-bees and ants.

6. LEPIDOPTERA.—Six feet, four membranous wings, covered with small colored, mealy, shining scales or feathers. Instead of the upper and lower mandibles, two hollow filments exist, which together form a spirally rolled tongue. *Examples*—butter-flies, moths and hawk-moths.

7. RHIPIPTERA.—Six feet, *two* membranous wings folded like a fan; on the anterior part of the thorax are situated two small, bent, hard and movable bodies, like wing covers. The masticatory organs consists of simple bristle-shaped mandibles, and two palpi. This order is composed mostly of insect parasites, which live on wasps, bees and other insects.

8. DIPTERA.—Six feet, two membranous expanded wings, generally with two movable organs, called posers or balancers, (*Halteres*) and which are situated behind the wings. The organs of the mouth consist of a sucker formed of a variable number of bristles, which are enclosed in an unarticulated sheath; most commonly they have a real proboscis, which terminates in a double lip. *Examples*—gnats, midges, house-flies, ox and horse-flies, &c.

Insects without wings consist of the folllowing orders:

9. MYRIAPODA.—They have more than six feet, twenty-four at least, and upwards which are placed on a series of rings extending the whole length of the body; each ring has generally two pairs of feet. The first and sometimes the second pair form parts of the mouth. *Expmples*—the centipede, julus, and scolopenda.

10. NEYRANURA.—Six feet; on the underside of the abdomen are situated flat movable appendages like prolegs and at the extremity is a forked apparatus by which the body can raise itself and move by leaps. *Examples*—the sugar-louse (*Lepisma saccharinum.*)

11. PARASITA.—Six feet: no other organs of sight except simple eyes.† The mouth is mostly internal, and consists of a snout, which cantains a retractile sucker, or it forms a cleft with two lips, two mandibles and hooks. *Examples*—different species of lice.

12 SUCTORIA.—Six feet, of which the posterior are the largest and adapted for jumping; these undergo a transformatien and acquire organs of motion which they had not at first. The mouth consists of a sucker enclosed in a cylindrical sheath and is formed of two articulated pieces. *Example*—the flea.

LINNÆUS included spiders and crabs among insects without wings. Naturalists now prefer to arrange them in two distinct classes: CRUSTACEA and ARACHNIDA.

Among so many thousand of species injurious to man, it is difficult to say which most deserves the attention of our readers. We are confident that *lice* and *ticks* which infest domestic animals, are not the least worthy of study aad extermination. Entomologists inform us that every animal nourishes, under particular circustances, on its skin, in the hair, wool, or feathers, a species of louse. Sometimes different species lodge on one and the same animal; for example, on the horse, one sort lives in the short hair, and another in the mane. A want of cleanliness and bad keeping greatly promote the multiplication of these parasites, on whatever animals they may be found.—The oily perspirable matter that escape from the skin of a fat animal is offensive to lice; while the poorer an animal becomes from disease or starvation, the better it suits these insects. Frequent use of the curry-comb and brush, and occasionally washing affected beasts with an infusion of tobacco, in addition to good keeping, are the best common remedies. To remove lice from hogs and ticks from sheep and cattle, there is probably no other remedy more safe and effectual than the free use of sulphur in their food, or in the salt given to stock. A little sulphur works readily in the blood, and is exceedingly distasteful to all insects; and unlike mercurial and other ointments, we have never known it to injure any domestic animal. European writers appear not to be acquainted with this cheap and valuable mineral taken internally, for the destruction of all parasitic insects. VIBORG declares that lice sometimes so abound on swine as to eat into their flesh, and come out of their mouths, eyes and with their excrements. Ointments containg quicksilver, snlphuret of arsenic, brimstone, and corrosive sublimate are prescribed by VILET. These are more or less dangerous, and as we believe, less effective than brimstone, or what is called the flower of sulphur, administered internally.

Wood-ticks do not breed on cattle as lice do, but they are often very troublesome. Sheep-ticks never leave the wool, but lay their eggs, live and die on sheep. When deprived of the fleece, ticks take shelter in the wool of lambs, if there are any

†The eyes of insects are peculiar. Many have thousands of facets or senses so arranged as to take in the whole of the horizon without trning the head of the insect. The eye of the common house-fly exhibits in a good microscope some seven thousand of these facets.

in the flock. It is the practice of New York farmers to dip their lambs a few days after shearing in a tub of water, in which a pound or two of cheap tobacco has been boiled. This kills all the ticks.

The insects injurious to field and garden crops, to orchards and forests, will be noticed in future numbers of the *Cultivator*. D. LEE

From the Soil of the South.

Red Clover at the South.

GREENSBORO, Ala., Sept. 6th, 1853.

MESSRS. EDITORS: I very cheerfully comply with the request communicated in your polite letter of the 27th ult., in sending you some of the results of my experiments with red Clover, animated with the hope which has been awakened by your suggestion, that it will subserve a very large public interest.

I came to Alabama in the spring of 1839, well indoctrinated in the calcareous theories and experiments of EDMUND RUFFIN, Esq., the great Nestor of an improved Southern Agriculture.—With such information it was not to be wondered at, that so soon as I became acquainted with the lime lands of Greene and Marengo counties, the conviction should be forced upon me, that they were well adapted to the growth of Red Clover. It was not long before I made some experiments which removed every possible doubt. As, however, my cleared land was all fresh and highly fertile, and the woodland was covered with a luxuriant growth of cane, covering even the summits level between the water courses, there was no demands for clover either for pasturage or improvement. This state of things continued for some seven years, when the disappearance of the cane created a necessity for looking out for some substitute for feeding stock. In clover I have found that substitute and every way more valuable than cane.

I have used this grass for grazing, more or less for the last 8 or 10 years, gradually increasing its cultivation as there was a demand for it. And I may add, that I have become more and more pleased, I might more properly have said enthused its advantages every hour. I esteem it far more valuable here than in a northern climate for two reasons—one is, that it does not require as frequent re-sowing, the ether that it furnishes good grazing during the winter and early spring months. These are important and almost inappreciable advantages.

My clover lots are as luxuriant the eighth and ninth years, as during the second and third.—They are a little scant too when the first growth dies out in June, and during some short spells of very rigorous weather in mid winter—at other times they furnish a liberal supply for continued grazing of the richest kind. My engagements on the plantation do not permit me to mow any for hay, which I might however, do, if there was a necessity for it. There is no difficulty in saving seed by pulling off the heads from a few acres and putting them away in that form for future use—about three bushels of these heads well rubbed between the hands and sowed like oats, will secure a good stand on an acre of land. As clover is a biennial plant, it is necessary to have the seed renewed in the standing lots every second year.—This is done by the seed which annually and semi-annually drop the matured heads which escape the cattle and hogs.

In the article communicated last January to the Southern Cultivator, I mentioned the amount of grazing derived from a five acre lot of red clover—I will now detail to you as nearly as I can what has been done by a twenty-five acre lot of seven or eight years in clover.

Early last spring my overseer put on it about one hundred and fifty of fattening hogs, some beef cattle and my brood mares and colts, and some old horses, &c. Now I believe he will attest, that during all that time to the present moment they have all kept fat without any other food but corn enough to the hogs, to keep them gentle and obedient to the call—I believe he will further say that in June when the clover matured half of it or more dried upon the ground, enough for a good dry carpet. I have semetimes believed that it would not be extravagant to say, that an acre of my clover furnished more stock food than would be supplied by 100 bushels of corn; there can be no hazard in saying, half that quantity.

I have not yet satisfactorily tested its benefit to the soil, which, however, can scarcely be called a matter of experiment—I sowed last fall, a lot which had been in clover some eight years, in wheat, and many pronounced it while growing the finest wheat in the country, but from thick seeding, very wet weather, or some other cause, the yield was an ordinary one.

In speaking of the grazing of the 25 acre lot, I forgot to say there was no rain on it from the 20th of March to the 1st of July. It should be also stated that it has afforded abundant grazing to the present time. It sprung up again very soon after maturing and owing to the irregularity of its maturity and renovation, there is moderate grazing even during June—I asked my manager a few weeks ago about the middle of August, whether his fattening hogs required much corn; he told me he only had a little given to keep them gentle and they often refused to eat it, they were so full.

I have had some thirty head or more of horses and mules on other clover lots, since my crop was finished, which lots were sown last February. I will next say a few words as to the mode and time of sowing, the quantity per acre and the lands adapted to its growth.

The land should be deeply plowed, well pulverised, and then six quarts of clean seed or 3

bushels of the rubbed heads sown to the acre—then covered with a harrow or brush and well rolled.

I prefer February to any other time for sowing, so soon as the danger of hard freezes is past.—The air and ground are then warm and moist, and it readily comes up and grows off rapidly.

It should be sown on open land and alone, if in the spring. It may do to sow it with wheat in the fall, but if sown with oats, it is kept back until oats are removed, when its sudden exposure to the hot sun is apt to destroy it; clover delights in sunshine when it has taken root, and when it has with the sun sufficient moisture. Its deep tap root, and especially is it so in lime land, enables it to bear drought far better than most other grasses.

The chief elements of this plant being lime and sulphur, the soil for its successful growth must, also, contain a proper quantity of these minerals furnished by nature or by art—as I have no experience in an artificial preparation of land for clover, I will not speak on this subject, but the experience of others authorises me to say, that any one who bas good clay or loam soil, can by the proper use of lime, gypsum and Guano, succeed with this valuable grass.

Thus, my dear sir, have I, *currente calamo*, imperfectly complied with your request, by giving you an inkling of my experience and views regarding red clover. If there be any omission or defect which I can supply, most cheerfully will I do it upon your suggestion. If it shall aid you or the great cause your are so commendably engaged in advancing, it will be to me a source of heartfelt pleasure and a rich compensation for the small trouble it has cost me.

Yours very truly, I. CROOM.

From the Southern Cultivator.

Pruning the Scuppernong Grape.

We copy the following from the Charleston *Mercury*. The writer, who is an experieneed vine grower, resides near Wilmington, N. C.

The great aphorism of Bacon, that man discovers truth so far only as he makes himself the patient interpreter of nature, receives a new or a vaster application than he himself probably designed, when he uttered that wise and pregnant sentance."—*DeBow's Review*.

To illustrate the above aphorism, based on wisdom, let me relate a comparatively humble, but lately discovered fact, now practically settled, by close observation.

I shall simply preface my statement of facts by saying that the people of the Southern States are more or less acquainted with the Scuppernong vine. Its native and most congenial place is granted to be the eastern portion of North Carolina. It is there, also, where its fruit was first converted, or rather manufactured, (by drugging it with sugar and alcohol) into a *soi-disant* wine, which is a misnomer; since the people of North Carolina, pretty generally, never ferment the "must" into a vinous beverage. Still, this vine must be considered a great blessing to this country. It is unique in its physiological structure and functions. It is extraordinary in its great productiveness.—Its fruit is lucious and sweet, and abounds in the tannin principle, or self-preserving element; though the skin is thick, the seed large and numerous, the pulp mucilaginous; still, nature has placed this vine and its fruit on a very high platform of natural improvement, and has imparted to it an aromatic boquet peculiar to it. This high natural condition is greater than that of any fruit or grain that man has gradually civilized and improved, by continued and careful cultivation, and which now is his daily food. In conclusion, I have always looked upon the Scuppernong as the grape that was to be the most profitable of all those American varieties that came to my notice, and the American champagne grape par excellence; its aromatic boquet making it superior to the Pinot, or Pineau of Champagne.

Full of this idea, I, four years ago, bagan to study its habits and especially its circulation, so much complained of. The universal impression and experience of all seemod to establish as an undeniable fact, that the Scuppernong could not be pruned or touched with the knife, at any season, without causing it to bleed to death, or nearly so; and therefore it was allowed to spread out in luxuriant wildnsss over a large extent in a few years, and in a few years more it became an unmanageable mass of dead wood in the middle portion; its vigorous wood on the extremities of the arbour only bearing any fruit. This feature of this vine, was, in my mind, an insuperable objection to its being adapted to yield a staple produce, easily and cheaply managed. This wild condition caused its bloom to be not a unit, but it continues to bloom for a long time, a single flower after another; the natural consequence of whieh is, that you see on the same vine or even in the small cluster, berries in every stage of progress, from entirely green to completely ripe fruit. This is a very objectionable condition, since you cannot have one vintage; since such discordant elements can never yield a unit of fermentation, which is indispensably necessary, in order to make wine, and not vinegar.

This wild condition causes this vine to produce also scattered small clusters, having only a few berries on each, which renders the gathering of the vintage laborious and expensive. All, or nearly all, these difficultics could be surmounted in the course of time by cultivation, if the vine could be pruned; therefore, the principal thing necessary to be found, was the comparatively quiescent state of the circulation, or the period when the vine could be pruned with perfect impunity;

from which would follow, as a natural consequence the easier management of the vine, the concentration of the sap into fewer fruit buds, and consequently a greater number of berries on the same cluster; and in course of time, by careful cultivation and appropriate manuring, would cause the fruit to have even a thinner skin, fewer seeds, less mucilage, more surgar, and milder tannin principles. Though it is only three years since I have applied my discovery of the Scuppernong to its education, still it has already given a sure and clear evidence, (in a more or less degree in its various parts,) of the tendency of the vine to bring to pass the reasonable consequences above mentioned.

The safest and only period for pruning this vine, is just at the time when it has been disburdened of its ripe fruit. I have come to this positive result, not only by logical reasoning, that the sap must be least abundant when it had gone through the most exhausting process that the vine is capable of, that of reproduction, but by actual experiment upon them every month in the year, I have come to the demonstration of this discovery; and it is equally certain, as general experience had established before, that to attemp to prune it at any other time, the vine dresses is sure to kill the stock and ruin the vine.

This I beg you to publish, not to gratify the idle inquisitiveness of the New York *Evening Post*, but in the hope that it may do some good to our Southern Planters. Very respectfully,

J. TOGNO.

Diccoteaux, Sept., 1853.

From the Ohio Cultivator.

Ladies on Horseback.

DEAR SIR:—I received your letter of the 26th ult., and hasten to comply with your request, although I fear I am not competent to express my experience in riding so as to benefit others. I will try, however, and if I fail you must take my good will for the deed. I will commence first with the horse.

A lady who has the good fortune to possess so noble an animal, should make it a point to select one that has a tender mouth, easy gait, good disposition, full of ambition, and at the same time obedient. To acquire a good command over the horse, the rider must not think it beneath herself to pay her steed a morning call almost every day, and present him with a luxurious morsel, such as a sweet apple, piece of sugar, or bread, and let him eat it from the hand; speak gently, pat him and handle his legs, to show him you are not afraid of him; in this way friendship and respect are established, which is very essential to have perfect control over him.

There are three ways of mounting with or without assistance; few of us have not taken poison in the shape of medicine, which so fearfully destroys vital strength and energy. To those happy ones who have escaped the drug system, I would say, practice to jump from the ground to the saddle; this is the most noble and independent way of mounting. Those like myself who have gone through a course of drug and *die*-stuffs, and consequently become debilitated and weak for life, must, if they wish to mount alone, lead their horse to a block or fence, take the bridle with the left hand, grasp the pommel with the right, and place the right foot in the stirrup, then swing yourself quick into the saddle; when seated, remove the right foot and put the left one in its place; be sure and not put more than three or four toes in the stirrup; then in case of accident the foot will be extricated instantly. If you wish to mount by the help of an attendant, place your right hand on the pommel, left on his shoulder, left foot in his right hand, while he holds the horse with his left, then give the word to mount, stiffen the knee, and when you feel the attendant's pressure on your foot, raise yourself steady, with the aid of your right hand, and you will bound to the saddle as light as a feather. Try and place your foot in the stirrup without assistance; this searching for a foot enveloped in a mass of long drapery is, to say the least of it, unpleasant; one can soon learn to do so, by removing the foot from the stirrup and replacing it again whenever the horse is on a walk.

A lady should make herself as comfortable in the saddle as in the chair; sit straight but not stiff, balance herself firmly in the saddle, bear no weight in the stirrup, except when the horse is on a full run. In dismounting, remove the foot from the stirrup, the leg and dress from the pommel, then slide gently down, holding on to the pommel, still retaining the rein in the left. It is imprudent to jump off. I know several ladies who sprained their ankles in this way.

For a riding dress, select any thing but glazed skirts; stiff material should never be worn; there is a kind of cotton goods, called Angola, of a dark grey color; it is soft, strong and heavy enough to remain in its place when the wind blows. For common use I know of nothing better; it looks, washes, and wears well, and costs from 12 to 20 cents per yard, thereby combining economy and utility. For a better dress, black or dark green alpacca; or, if a lady's purse will permit, French merino, or fine broadcloth, looks well.—The new style, vest and jacket, and separate skirt, are preferable to any other, as no whalebones are needed, besides being very tasteful and convenient.

You also want to know, Mr. H., what underskirts are best adapted for riding; perhaps if I tell you, you will wish you had never asked the question; but I take it for granted that you are

not prejudiced, and always approve of common sense and comfort. I will tell you what I wear, and for what reason:—I wear none but a thin white skirt, the usual dress length, and what so many people look upon with awe—the Bloomer pants. Very few horses have so often a gait as not to bounce the rider in the saddle at times; then the skirts will creep above the knees and locate around the body, which is very uncomfortable. I think pants that open on the side are indispensable to true modesty in riding in carriages as well as on horseback, for we are not sure that an accident will not happen.

Very respectfully,
SOPHY CORNWELL.

From the American Farmer.

The Farmer in Alabama.

LAND OFFICE, ST. STEPHENS,
20th August, 1853.

To the Editor of the American Farmer—

DEAR SIR:—I have just received the Farmer for the last year, (Vol. 8)—not only a handsomely put up volume, but as regards matter, I view it as invaluable to a planter. As a *practical* work, I have long viewed it as standing in the front rank, for the *practical* man; and I must frankly say that this last volume, in my humble opinion, for usefulness, leads. I confess my astonishment that it is not in the hands of every person that cultivates the soil. Among other considerations that this volume exhibits fully, one I am compelled to notice as peculiarly to me agreeable. It exhibits the fact fully, that some of the most reliable and *respectable* heads and hearts of the country, view themselves authorised to pursue agriculture with all the zeal and energy they are capable of, and in this way elevating the pursuit, and bringing it fairly into the estimation of the less informed farmer, that it received from him whomwe esteem—the *first of men.*

I can with pleasure assure you that your sheet is doing much good among our planters. If it was in my power I would circulate five thousand copies gratis among our planters. This would be a work worthy of some of our wealthy associations, or our *liberal millionaires.*

My dear sir, it is too late in the day for either of us to assume the language of flattery—you will be assured that I give you the result of feeling and experience.

The sheet circulates considerably in this country, and I have often noticed with more than pleasure, the common remark, from planters who *read* it, when recommending any improvement in cultivation, this reply—"My dear sir, the *'Farmer'* makes it as clear as the light of heaven, that *deep ploughing is every thing*—that the basis of all improvement of land is *Lime*—that the *key* to success in farming is *manure*—the art of making manure." These remarks from our *planters* is a subject of remark to me weekly—my official situation bringing me almost hourly into contact with the planters.

There are a vast number of agricultural periodicals now in circulation, but I regret that they do not all *arrest public attention*—of the laboring class, the less informed. It certainly requires peculiar tact to get up even sound knowledge, to *make this seizure.* Your sheet has it singularly—and most fortunately for this State, for we are improvrng in agricultural pursuits most assuredly. In this last respect we are getting a most valuable sheet of our own—the "Cotton Planter," by a scientific practical planter, Dr. Cloud. This sheet is securing great popularity for reading and usefulness. The Editor is one of those *fortunate* gentlemen, who excels as much in superior common sense, as acquired knowledge; the Doctor is a kind of "Bacon" in agricultural knowledge—he makes *facts* the *basis* of *argument* and *conclusion.*

I enclose you, with much pleasure, a gold dollar for the last volume, and am truly and respectfully

Yours, &c. JAS. MAGOFFIN.

From the Camden (Wilcox Co.,) Mirror.

Cotswold Sheep.

We were invited a few days since by our worthy and enterprising fellow citizen, Col. John M. Burke, to see his fine Cotswold Sheep.

Col. B. has now four of these Sheep—a three year old ram, a younger ram about fifteen months old, and a young ewe with her lamb about two months old. We had heard much of this breed of Sheep, and of the particular ones owned by Col. B., and, as a matter of course, expected to see animals far superior to the most perfect formed and well grown of the common Sheep of this country; but our expectations fell far short of the reality. At Agricultural Fairs at the North, and elsewhere, we have seen the finest Merino and Southdown Sheep, but nowhere have we ever seen a Sheep that would atal compare with Col. B's three year old ram. In fact, if he did not bleat like others of his kind, and have wool "in the place where the wool ought to grow," one would be led to suspect that he was of some newly discovered genus from the Australian kingdom of animals. This Sheep possesses one remarkable distinguishing feature—a mass of muscle and fat, like a huge pad, covers the whole back and rump, hanging down to the sides and around to the tail. In other respects it is sheeplike, only on a magnificent scale.

Col. Burke's two rams have cost him $700.—The three year old one was imported from England. It is said he has but one competitor in the world. He took the prize at the Royal Agricul-

tural Society at Norwich, of $100, another at Baltimore last fall, and at every other place where he has been exhibited. When fat, he weighs 420 lbs, is five feet around the body, has a broad brisket like an ox, and when moving has a gait similar to that which weight, and a seemingly studied dignity, imparts to the elephant. He sheared last spring 18¾ lbs. of washed wool. His fleece before shearing measured 16½ inches.

The others, for their age, are equally as fine looking Sheep as the ram described. Col. B. is so much pleased with them that he has purchased six more ewes, one of which is said to be the largest in the world.

At a great expense and much trouble Col. B. has introduced this superior breed of Sheep into our State. His principal object is to improve his own Sheep; but he is not unwilling to extend to other Sheep raisers the advantage which a cross with the Cotswold ensures. By next spring he will be able to furnish thorough-bred rams at from $100 to $200, half breeds from the common Sheep at $20, and a cross with the Merino and Southdown at $30 each.

Our planters should avail themselves of this opportunity of improving their flocks by a cross with this breed of Sheep.

Its wool commands now in market ninety cents per pound. Its mutton sells in the northern markets for twenty cents, where other mutton will bring not more than eight cents. It is said that they are seldom troubled by dogs, for the reason that they seldom, if ever, run at the sight of a dog; and that on grass lots where the common Sheep will but barely sustain existence, this Sheep will keep in fine order.

The Royal Agricultural Society of England has recommended all the Sheep raisers of that country to cross with the Cotswold. In Virginia all who are engaged in raising Sheep are fast introducing a cross of this kind upon their common stock, and find them greatly improved. Col. Ware, of Clarke County, Va., from whom Col. Burke purchased, has now orders for as many lambs as he can possibly furnish for the next two years. Every one who has tried them has spoken in the highest terms of their superiority. Their immense body, fine constitution, early maturity, and adaptation to fatten, added to the peculiarly fine flavor for mutton, justly place this breed of Sheep above all others.

To Remove Ink, Fruit Stains and Iron Mould.—Wet the spots with milk and cover them with salt, before washing; and, if necessary, rub again with a mixture of the same, and it will remove these stains.

Horse-radish infused in milk is said to be a good cosmetic for clearing up and beautifying the skin.

From the Cultivator.

The Preservation of Eggs for Winter Use.

I notice on page 121 of your last, a new mode of preserving eggs. I think I can describe one that is much better, because cheaper, less roomy, and much more philosophical. It should be borne in mind, that eggs are mainly composed of albumen, mixed with a minute quantity of the salts of sulphur, phosphorus, lime and magnesia. The shell consist mostly of lime. Of the whole weight, the shell constitutes about one-tenth, the white six-tenths, and the yolk three-tenths. Few animal substances are so putrescent as eggs, unless preserved with care. The shell, composed as it is mostly of lime, glued together with a trifle of animal matter, is its most natural and safe depository. Yet even the shell yields gradually to the action of the atmosphere, so that a part of the watery fluid of the egg escapes, and air occupies its place, thus injuring the quality of it.

The great secret then of preserving eggs, is to keep the interior in an unaltered state. This is best done by lime-water, in which a little common salt is infused. This constitutes a fluid perfectly indestructible by air, and one that is so allied to the nature of the shell as not to be absorbed by it, or through it into the interior of the egg. On the other hand, salt or lime, in a dry state, will act on the moisture of the egg, as will strong ashes. This plan, also, will save more eggs in a given space than any other. It will also admit of keeping them in cellars ever so damp, and, I had almost said, ever so foul, since nothing will be likely to act on the lime-water. As eggs are very nearly of the specific gravity of water, and so near with it, I have little doubt that eggs barreled up tightly, in lime-water, could be transported as safely as pork.

Lime-water may be made in the most careless maner. Seven hundred pounds of water will dissolve about one pound of lime. A pint of lime, therefore, thrown into a barrel of water, is enough, while ten times as much can do no hurt, and will not alter the strength of it. The salt, which I do not deem very important, should be put in a small quantity, say a quart to a barrel. All are aware, that a very large quantity of salt may be dissolved in water. Brine strong enough for pork, would undoubtedly hurt eggs.

Having made your lime-water, in barrels if you are a merchant, and in stone-pots if you are a small house-holder, drop your eggs on the top of the water, when they will settle down safely. It is propably important that no bad eggs go in, as it is supposed by some that they would injure others. To test your eggs put them in clean water, rejecting all that rise. A better remedy is to look at them through a tube—say a roll of paper, by daylight, or hold them between your eye and a candle at night. If the eggs are fresh, they will,

in either case, look transparent. If they are a little injured, they will look darkish. If much injured, they will look entirely dark.

Eggs, well put up and kept in this manner, will keep, I cannot tell how long, but until they are much more plenty and cheap than at present, quite long enough.

Leached ashes well dried, and even grain, have kept eggs very well, in my experience, but no method is so cheap and obvious as the lime-water. As lime absorbs carbonic acid slowly, and thus becomes insoluable, so almost any lime, even, though it has been slacked for months, will answer, the purpose. Lime water, permitted to stand still, will immediately be covered with a transparent film. This is the lime of the water uniting with the carbonic acid of the atmosphere, and returning to the state of limestone, and does not hurt the eggs.

I send you this long account of a small thing, not because it is new, but because many people forget old and very familiar things.

C. E. GOODRICH.

Utica, August, 26, 1853.

From the Self Instructor.

Rail Roads.

Rail Roads are becoming so numerous, that few men of property have not some interest in them, either as stock-holders, directors, or proprietors. Of these, there are many who have not the time, or perhaps the necessary preparatory knowledge, to read a work on engineering, but who may be much benefitted by some general ideas on the subject. The want of such has cost the country millions of dollars; but it is not yet too late to save other millions, by attention to a few principles, which may be made clear in such a work as this.

In the first place, there is a great mistake prevalent as to the qualifications of engineers, and their fitness for the various offices of responsibility in which they are placed. The complicated operations of a railroad company are not unlike the strategetic movements of an army, and it would be as wise to put a *mechanical* engineer, who had only *built* a few railroads, in the control of operations directed to united two distant place, separated by a rough country, as it would be to place a colonel at the head of an army, because he had proved himself a brave man and a good disciplinarian. To locate a railroad to the greatest advantage requires a considerable grasp of mind.—Any ordinary engineer, who has learnt his trade by the use of his eyes, may *build* a road; but to select the best route—to secure the shortest distance with the lowest grade—to estimate correctly the course which would involve the least expense—to judge where a free expenditure of money is the best economy, and where cheap and temporary structures may supply the place of those more permanent and costly—to make specifications of all the work so close as to leave as little room as possible for additional expenses—to calculate the necessary amount of material—to estimate the whole probable cost, and sum up the resulting revenue thereon, *before a stroke is struck*, requires no mere mechanic, but a man of judgment, foresight, imagination, decision and general resource. A chief engineer should be either a thoroughly trained man or a *genius*, whose natural ability makes up for his want of the ordinary course of education. In all great works, such a man, and no other, should be employed, even at the cost of a double salary. When the whole is arranged, and the *mental* labour all applied, an inferior man may see the mere work perfected; but where millions are at stake, good economy would prompt the employment of the highest talent throughout.—This holds good in private corporations, and should be insisted on in any charter granted for the construction of works in which states or cities are stockholders.

It is the public interest to see that the highest talent of the country be developed, especially in the engineering department of mechanical art, for upon the wisdom of her railroad operations does much of the South's chance for direct trade and commercial independence rest. Our natural resources, our climate, and the distance of our cities on the sea from the great West, gives us such advantages, that, with patriotism, knowledge and integrity at the head of our railroad combinations, Charleston and Savannah* need not long remain behind either New York or Boston.

Let us support our military schools as near as possible on the model of West Point, and there will be no want of mechanical talent and theoretical knowledge among our youth, to supply any demand we may make. When the South supplies her own working men, in the shop, the schoolhouse, the pulpit, the field and the bar, *as the North does*, then, and not before, may we hope to command the wealth and use the strength which is ours, by the gift of God.

Rome thanked her generals because they did not despair of the republic: the South can scarcely honour too highly the men who, dismayed by no difficulty, pierce the lofty Blue Ridge, to unite the prolific West with *us*, in the great onward march of improvement.

TO SOFTEN HARD WATER.—A correspondent wishes us to state that a teaspoonful of salt, thrown into the water, will soften from three to four pails of hard water. This is a valuable receipe for house-keepers, and one which may be very easily tested.

*And we add Mobile and New Orleans.—[ED.

Preserving Fresh Fruits.

Having seen in print some notice of Wm. R. Smith's successful process of preserving fruits, and not having seen any reliable exposition of his process, I wish to inquire through your paper, whether the same has been made public? If his process is valuable let it be made public, or let us have it in some way or other; if not gratuitously, by paying the discoverer a fair compensation.

B. J. HARVEY.

Lenawee Co., Mich.

We have frequent inquiries of a similar character. The process which W. R. Smith has adopted, consists substantially in expelling the air from the jars of fruit by heat, and then hermetically sealing them, and so far, is nothing new. But the minute details of the process, varying with circumstances, and often so modified when applied to different fruits, that what would succeed with one, would entirely spoil another,—have only been learned by long and careful practice. These details cannot be described by words merely, and months of experience would be necessary to enable any one, however ingenious, to reach the perfection which has been attained. From what we have personally observed of the process, we do not think an unpracticed person could succeed from a description, or from actually seeing the whole, any more than an unlettered man could, without a day's previous trial, set down at a desk and dash off a dozen letters in a free and elegant hand, merely from hearing a lecture on penmanship, or seeing another write. We do not know whether W. R. Smith would be willing to receive and initiate pupils in the art—he would doubtless ask a large sum for doing so, as some compensation for the years of labor he has already bestowed in perfecting the art.—*Albany Cultivator.*

RUSKS.—Beat 7 eggs, mix with them half pint of new warm milk, in which ½ lb. of butter has been melted, add ½ pint of yeast, and 8 ounces of sugar; put them gradually into as much flour as will make a light paste, nearly as thin as batter. Let it rise before the fire half an hour, add more flour so as to make it a little stiffer, work it well, divide it in small loaves, or cakes, 5 or 6 inches wide, and flatten them. The cakes when first baked, are very good buttered for tea.

SECRET FOR A FARMER'S WIFE.—While the milking of your cows is going on, let your pans be placed in a kettle of boiling water. Strain the milk in one of the pans taken hot from the kettle; and cover the same with another of these hot pans, and proceed in a like manner with the whole mess of milk, and you will find that you have doubled the quantity of good rich cream, and that you will get double the quantity of sweet, delicious butter.

TO FRY HAM.—Cut some fine slices from the large end of the ham, take off the skin, put them in a frying-pan, and pour hot water over it; set it over the fire and let it boil up once, then pour the water off, take the slices up, put a spoonful of lard in the frying-pan and let it become hot; dip the slices in rolled cracker, or wheat flour; and fry them a nice brown; when one side is done turn the other, then take them on a dish, put a very little water in the pan, let it boil up once, put it over the meat. Or, if a flour gravy is wanted, make a thin batter with a teaspoonful of flour and cold water, and stir it into the gravy in the pan; let it brown and if too thick, put a little hot water into it; stir it smooth and serve with meat.

TO BOIL HAM.—Cut some slices of ham, quarter of an inch thick, lay them in hot water for half an hour or give them a scalding in a pan over the fire; then take them up, and lay them on a gridiron, over bright coals; when the outside is browned, turn the other; then take the slices on a hot dish, butter them freely, sprinkle pepper over and serve.

Or, after scalding them, wipe them dry, dip each slice in beaten eggs, and then into rolled crackers, and fry or broil.

TO MAKE PEPPER SAUCE.—A lady kindly furnishes the following recipe to prepare this wholesome and indispensable sauce:

Select Cayenne peppers fully grown, leave the stems attached, rinse them, and put them in a convenient bottle for use, as many as it will contain; add a teaspoonful of salt and a tablespoonful of sugar; fill up with strong vinegar. In a day or two, it will be fit for use. It can be replenished with vinegar until the strength of the peppers is exhausted. If the Cayenne peppers are not to be had, any small, strong peppers may be substituted. Keep the bottles corked.

TOMATO FIGS if well prepared, cannot easily be told from the tree fruit. Take sugar-house syrup, or use 6 lbs. of sugar to a peck of tomatoes, of the kind which resemble figs in shape. The Bermuda method is to scald the fruit and peel it, and then cook them in the syrup, and afterwards dry them in the sun, then pack them in boxes with powdered sugar between the layers. They will keep as long as any figs. The syrup in which they are cooked should be bottled for table use—it is good on buckwheat cakes.

VALUABLE EARTH—A kind of earth is said to have been discovered in the island of St. Vincents which is used both as a cement under water and manure. English chemists having analysed it, and pronounced it more valuable than guano,



American Cotton Planter.

MONTGOMERY, ALA., DEC., 1853.

N. B. CLOUD, M. D., EDITOR.

Our Agents.

Wm. Strickland, Book-seller, No. 28, Dauphin street; Boullemet's Literary Depot—corner of Royal and Dauphin street; H. H. Carver & Co., Battle House Book Store, Mobile; from any of whom the back numbers may be had.

A. P. Priester, Exchange Corner; C. R. Hanscom, Market street, Montgomery.

With *The American Cotton Planter*, our agricultural friends will find all the new and valuable publications of the day, either literary or agricultural, at the above-named Book Stores.

Mr. Amos Travis is our agent at Gainesville, Sumter county.

Mr. N. Plumb, Sparta, Conecuh county.
E. B. Fox, Sandy Ford, Fla.
Capt. J. Jack, Havana, Greene county.
Wm. G. Brewer, Tuskegee.
H. C. Bissell, Carlowville.
Dr. Wm. Cunningham, Burnt Corn.
Dr. J. F. Dorton, Camden, Ala.
E. J. Capell, Esq., Rose Hill.
Isaac Parks, Oak Bowery.
Dr. Batt Peterson, Clayton.
Jas. Montgomery, Fife, Ala.
N. A. McMillan, Canton.
Dr. J. E. Powllnitz, Montpelier.
Dr. John A. Whetstone, Bastrop, Louisiana.
G. M. Reynolds Mr. Turner, Mr. B. M. Clark, Mr. H. P. Douthit. S. T. Stanton and Frank Spencer, are our traveling agents.

Errata.

☞ In the fourth and fifth lines from the bottom of the second column of the first page of Professor Harper's article, in our Nov. number, for *Gorrypiperda or Gorrypii*, read *Gossypiperda or Gossypii*.

Agricultural Association.

We hereby acknowledge the receipt of $5, from Mr. C. E. Rushing, of Marion, Lauderdale county, Miss., his initiation fee of membership.

N. B. CLOUD, *Secretary*.

☞ Just as soon as we can arrange and get it out, we shall furnish our subscribers the Title page and General Index, for the first volume of the Cotton Planter.

Our Correspondence.

Since our last number, we have received communications from Dr. M. W. Phillips, Miss., J. F. Smith, Benton, Ala., "Clod Thumper" Talladega, Ala., Dr. H. A. Swasey, Yazoo City, Miss., "Osier," S. C., "Y. A." Demopolis, Ala., Prof. L. Harper, Eutaw, Ala., "A Son of a Carpenter," "Salas C. Block, Plow Boy," N. T. Sorsby, Forkland, Ala.

☞ Our notice of the Fair and Exhibition of the Agricultural Society of Autauga county, recently held at Robinson Springs, is unavoidably crowded out of this number, but shall certainly appear in our next.

Our First Volume.

With this number, we close the first volume of the *American Cotton Planter*. To our friends all—subscribers, correspondents, agents, and every one, who has even thought well of our enterprise, we wish a merry smiling Christmas, with barns full and markets prosperous.

To our subscribers we remark, this closes our part of the contract for this year. If in all things you are not entirely pleased, remember we have but just commenced, measure us by our age, and not by those journals that have had the experience of years in which to amend and improve. Our motto at the begining was "improvement." We have steadily pursued it, and in this same spirit we enter upon the labor of our second volume. We have waged an interminable warefare upon *poor land*, and upon *poor plantation economy*. The legitimate object of agriculture is to improve the land, and the condition of every thing connected with it. For the consummation of this noble object we have enlisted, nor do we intend voluntarily to trail the banner of the *Cotton Planter*, as long as there is an acre of poor land, or a poorly cultivated farm in Cottondom!

To our correspondents we return our sincere regards, for the aid furnished us in the work of our first volume. We are pleased to find our list of correspondents increasing. In this department, we hope our friends will exercise a more lively interest during the next and coming years. No one man, however great or diversified may be his talents, can long interest a community of intelligent planters and mechanics. Nothing will continue to interest and instruct, but a transcript of practice from the field or the shop, regardless of fine turned periods—*truths are plain and pointed!* And in this connection we extract from a private letter a sentiment that we wish all of our friends and correspondents could realise.

"It is next to impossible to keep up a paper without the aid of contributors; I don't care what amount of intellect the Editor may bring to the task, he cannot secure the sympathy, and shoulder to shoulder support which is essential to certain success. When the patron of the paper becomes a sub, or co-editor, a sort of *parti-*

ceps criminis, as well as *honoris*, he is safe, and feels anxious to have all his neighbors take it, to have its merits discussed and above all things to deprecate its failures."

This is the experience of a new contributor to the *Cotton Planter*, tho' long and well known to the readers of the Southern Cultivator, and the Agricultural papers of South Carolina.

Will the friends of the *American Cotton Planter* enter with us into the *spirit* of this enterprise? Will every one feel that it is *our paper*, and every one, in their respective sphere, determine to give it a warm support? We hope the subscribers to the first volume intend to become subscribers to the second. Each one can do this for himself, or hand the dollar to his postmaster, to be forwarded at once. It is a matter of some importance to us to know at an early period, something near the extent of our subscription list that we may regulate our edition accordingly.

We ask the attention of our readers to the articles on "Hill-side Ditching" and 'Horizontal Culture' concluded in this number of the *Cotton Planter*. Mr. Smith is a practical man, and he writes on this important subject plainly and sensibly. As Mr. Smith uses the same level recommended by Mr. R. S. Hardwick, we again introduce it for the better understanding of our readers.—We take occasion here again to remark to our planting friends, who intend to engage in a system of plantation improvement, that the very first and most important step is horizontalising. The watch-word with every planter should be, *water must not run on cultivated land*. Vegetable mould, *humus*, the food essential to the healthy, luxuriant growth and productiveness of Cotton, is lighter than water, and rises to the surface of all water falling on the land, and if the water runs off the *humus* goes too. Muddy branches, creeks and rivers, measure the losses in humus and rich soil, which the cotton lands of the country sustain annually, by running, as nine tenths of our planters do, our rows up one hill-side and down the other. If rain water did not run off of cultivated land atal, such land, under a judicious system of rotation, with an occasional fallow, never would fail in productivess. It is the extreme of folly for a planter to economise and pile up his manures in his stock lots through the fall and winter, and in the spring hawl it out on his cotton fields, when every row is laid, like so many ditches, 3 to 4 feet apart, to drain and wash off the manure into the branch! during every shower of rain through the summer.

Crooked, level rows, not only contain the greater number of hills of cotton and corn, but they grow the best cotton and corn and preserve the fertility of the field.

☞ The communication of "Clod Thumper" and "Son of a carpenter," were unavoidably crouded out of this number, but shall certainly have a place in our next.

Our Cabinet of Exchanges.

Our notice of several new and valuable exchanges was crowded out of our last number.

We have on our table the *Southern Quarterly Review*, published at Charleston, S. C. This is a standard Literary and Political Review, the staunch advocate of Southern sentiment and Southern Institutions. Of its Literary excellence it is only necessary to remark that it is edited by "Wm. Gilmore Simms Esq. L. L. D," assisted by an able corps of contributors, numbering many of the first men of the South and West. No gentleman of literary pretensions, or who desires to keep posted up in the political progression of the times, should be without this Review. It commenced its twenty-fourth volume with the number for July last. It is published by Walker & Burk, at $5 per annum.

We have also the "*Farm and Shop*," a new semi-monthly folio periodical, "devoted to Agriculture, Horticulture, Manufactures, General News, &c.," published at Indianapolis, Indiana. The number before us is neatly gotton up and well filled with valuable matter. Published by O. P. Mayhew, Editor and proprietor, at $1 per annum.

The "*Scientific American*" commenced its ninth volume on the 17th, September. This is one of the best publications in the United States. No Mechanic, or Industrial man should be without it. Published weekly by Munn & Co. New York, at $2 per annum.

The "*American Artisan*," another valuable weekly devoted to Manufactures, Mechanics, Inventions, Agriculture and Commerce, commencing its 7th volume the middle of Sept. Published in New York, at $1 per annum.

We have also the first number of the "*Self Instructor*," a new publication just commenced in Charleston, S. C. A monthly journal, devoted to Southern education and to the diffusion of knowledge, of the resources and power of the South, as represented by the Negro, the Rail and the Press." Edited by Richard W. Habersham. Suscription price $2 a year in advance.

This Journal has been commenced by Mr. Habersham under a resolution of the Memphis Convention, which commends itself to the respectful consideration of every Southern man.

"*Resolved*. That this convention recommend to the Citizens of the States here represented, the education of their youth at home, as far as practicable; the employment of native teachers in their schools and Colleges; the encouragement of a home press; the publication of books adapted to the educational wants and social condition of the States; and the encouragement and support of inventions and discoveries in arts and sciences by their own citizens."

"*The Parlor Magazine*" is another handsome publication just commenced in Cincinnatti Ohio. This publica-

tion is handsomely gotton up and contains a variety of interesting and readable matter. Conducted by Jethro Jackson; subscription price $2 a year in advance.

We have also, DeBow's Review, Industrial resources &c., of which we have spoken before. This excellent publication commenced its 15th volume old style, and 2d volume new style, with the July number last. The high reputation of this Industrial and Commercial Review, is too well established and deservedly appreciated by the business men of the South-West, to need the aid of our public pen. Published in New Orleans at $5 per annum

We have received from the Editors, Messrs. Smithe and White, the "*Georgia Home Gazette*," with a request that we exchange. Nothing in this line will afford us more pleasure. The *Home Gazette* is published at Augusta, Geo., at $2 per annum in advance. It is a fine large weekly sheet, well filled with excellent readable matter on every variety of subject, for family and home consumption. We should be pleased to see it circulate widely in Alabama.

Besides these, we have a number of weeklies, devoted to politics, religion, and neutrals, all doing battle more or less valiantly, in the great revoluiionary improvement of the age.

We cannot name here our several weekly exchanges; our limited space does not permit it; but we cannot forego the pleasure it affords us to acknowledge their favorable and kind notices and efforts on our behalf.—No favorable opportunity shall escape us, of promptly reciprocating.

[FOR THE AMERICAN COTTON PLANTER.]

Peach Trees—Cane—Rotation and Peas.

DR. CLOUD—*Dear Sir.*—I would like to know how to renovate old peach trees? I have a few that bear fine fruit, but having been neglected by their former owner, are about to die. Would it pay to get the common cane roots of the river swamp and plant them in our branches for winter pasturage? and has such ever been tried?

Rotation! In reading over the old numbers of several agricultural papers of the cotton growing States, I find they advise rotating cotton, without giving any reason. I believe that cotton differs in its habits from all other cultivated products, and from a small experience and larger observation, it is my opinion that it should never be rotated when the making of the cotton is the object. The first reason is, it grows and fruits better after its own self than anything else. Another reason for not rotating cotton upon the ordinary lands, is that its roots go deep and have a fine subsoiling effect, far beyond any other plant we have in the south, preferring the subsoil for the easy reception of the roots of the next years' plant; consequently when you change your cotton land the cotton weed loses that benefit. Why, sir, it is proverbial how well corn, oats, &c., grow after cotton; and the "old fogies" have ascribed it to the land being clear of grass; but, sir, it is owing to the subsoiling operation of the cotton roots, together with the inorganic manures brought from the subsoil and dropped with the cotton leaves upon the surface. Therefore manure your land every year and keep it in cotton. Yet I must admit that where the boll-worm takes to a field too liberally, and no remedy will prevent them, then we should change our cotton land; but manure high, plant early, and you will make a good crop before the worm comes.

I believe in rotating the grain and other crops, always letting the corn crop come after peas sown broadcast. But stop! In cotton gathering time it is a great loss to stop picking cotton to gather peas to sow broadcast the next year, especially when it takes so many bushels. 'Tis true, and in all the southern systems of rotation, no writer seems to have given his experience upon this matter. I would suggest that an early patch be sown of some early variety, to be gathered when the main crop is laid by to sow next year in the rotation, and by pulling up the vines they would answer as a green food for stock.

The shinny pea is an early variety that produces a fine vine, and by sowing early it makes seed n time to be sown after the oat crop comes off,—this pea I have tried.

A word about the "*American Cotton Planter.*" It is the only agricultural paper in our State, and well worthy the patronage of her citizens; indeed it would be a disgrace to the State did they let it sink. When I meet a planter in Alabama that does not take it, I look upon him as recreant to his calling. We have great confidence in its editor, and therefore would like to hear often from his pen upon theoretrical as well as practical farming.

This letter is longer than I intended it, but to redeem a promis made to you last spring to write, and one to myself to obtain you two subscribers, I have written. And when I return to Alabama from my visit, I will try to get two more, so as to

be one of the two hundred promised by one of your "Marengo" correspondents to obtain you four hundred subscribers.

I am experimenting in a small way upon different practical matters—the result I expect to report. I have a great many other questions to ask even in this letter, but we must not all speak at once. Success to your noble enterprise.

One of your subscribers,

Y. A.

DEMOPOLIS, Ala., Oct. 22, 1853.

The above sensible letter of questions, facts and theories from Tarboro of the old North State, contains some interesting and wholesome truth, which we take pleasure in laying before our readers. Y. A. is an Alabamian, on a visit to the old turpentine State.

To the first question of our correspondent, in relation to his neglected peach trees, we can give no satisfactory remedy, and refer the matter to our corresponding Horticultural Editor, Dr. Swasey, presuming that he can furnish the desired information. We are not aware than any successful experiments have been made in the trasplantation of the common cane. It can be done, but we could not vouch for the pay. We have always looked upon cane for winter pasturage for cattle, very much in the same light that we did the story of the alligator hibernating upon *lightwood knots!* We should greatly prefer clearing up and preparing the branches as meadow, and sowing them in red top, or herdsgrass, or the musquite grass. Can, or will any of our correspondents give us light on this subject?

Rotation,—Ah that is true, scientific agricultural philosophy? That cotton grows better and bears better after cotton than after any other crops, is not an argument against rotation, as a distinct agricultural fact. The experience and observation of our correspondent, offer additional testimony in favor of the *fact*, asserted by us in the February number of this journal—that the cotton plant is the best vegetable fertilizer known to agriculture. We never grow cotton after any other crop, our experience and observation having taught us long since, that the cotton is not benefitted by such practice; but we do invariably grow other crops after cotton, not because as the *Old Fogies* say, the cotton having been worked later, there is less, or no grass left on the land,—but from the agricultural fact, that cotton being the best vegetable fertilizer, leaves the land in a more productive condition. Of course these planters that so direct their rows *by line*, from the top of the hill to the branch, or creek—so that every fall of rain, shall run all the leaves and all the blooms, and all the burs and small limbs of the cotton, with all the inorganic salts, thus brought up to the surface, by the large dipping roots of the cotton, from the subsoil below, out of the cotton field into the creeks and rivulets, to the utter demolition of all the *"little fishes,"*—but these froggy-fied mud cats, that luxuriate and fatten upon the fertility of cotton fields, thus butchered and flayed—now I say, can these gentlemen realise the *fact indeed*, that cotton on land where water does not run, is the very best fertilizer, and the true reason, therefore, why all other crops grow better after cotton? This interesting subject will claim much of our attention hereafter. The field pea, called by Mr. Ruffin, the "Clover of the South," is only valuable as a fertilizer in the same way, *faintly and greatly inferior tho'* as cotton is. But the *Cotton Planter* says, with all due deference to the opinion and experience of Mr. Ruffin, *that Cotton, after grade ditches, upon horizontal rows, is the true clover of the cotton region*, and will improve our land and augment its productive capacity, more speedily and more effectually than any vegetation known to agriculture.

We are under many obligations to our friend "Y. A." for his efforts in behalf of the *Cotton Planter*, and shall be pleased to hear from him frequently.

Scientific.

[FOR THE AMERICAN COTTON PLANTER]

Preliminary Essay

ON A NEW SPECIES OF A FOSSIL CEPHALOPODUS MOLLUSCA.

CERATITES, *found in Greene County, Alabama; originating probably from the Permian, or Triassic formation, intermediate between the Carboniferous and Cretaceous formations, with an account for the Chloride of Sodium in the water of some of the Artesian Well-bored into the Cretaceous Rocks.*

BY L. HARPER, L. L. D. ETC.

Mr. H. L. Jourdan of Erie, in Greene County, Alabama, sent during the month of July, 1853, some fossils, collected upon a sandbank in the Black Warrior river, near Erie, to Eutaw, which, through the kindness of Mr. John Knowles of this place, were submitted to my inspection, and I was kindly allowed to select from them such as I should find interesting. The favor of the above named gentlemen led to the discovery of a cephalopodus fossil, new in its species and never before found on the Continent of America. The pleasant duty devolves therefore upon me, to present to Messrs. Jourdan and Knowles, the thanks, not only of the humble organ and recognizer of the fossil, but of the sciences of Geology and Palæontology, and their votaries, to whom these two gentlemen have rendered *a signal service.*

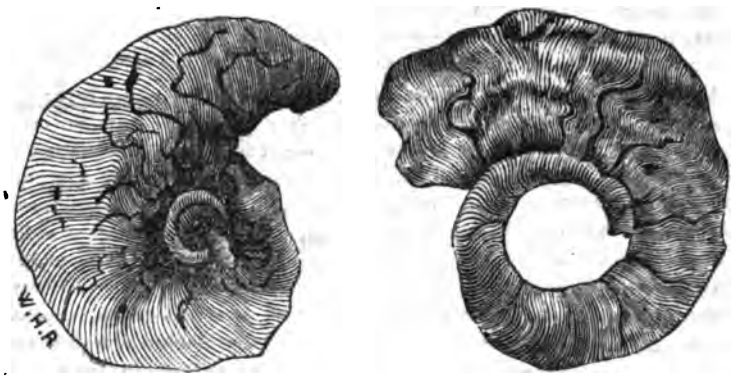
The fossils consisted mostly of teeth of fishes and other well known cretaceous organic remains, but there were three fossil cephalopods among them which attracted immediately my attention; I deemed them in the first moment to be Ammonites, remembering that the Ceratites, the fossil cephalopod which they resembled most, never had been found in the rocks of the United States.

A closer examination of the interesting fossils mollusca, convinced me, nevertheless soon, that they were not Ammonites, for, instead of the foliated sutures characteristic to this genus of cephalopodus mollusca, I could distinctly perceive a denticulated termination of the descending lobes, characteristical only to ceratites, and I did not hesitate to declare them to be "*the first ceratites ever found in the fossiliferous rocks of America.*"

As my discovery seemed to me a very interesting one, but as, at the same time, I thought I could possibly have been mistaken in classifying my cephalopod among the ceratites, never before found in the United States, nor as far as I remember on the whole continent of America, I sent accurate drawing of two of the fossils to the great geologist and palæontologist, Professor L. Agassiz of the Lawrence Scientific School in Cambridge, Mass., who was kind enough not to leave me long in uncertainty; he answered:

"I lose no time in giving you all the information I can respecting your interesting cephalopod. I have no doubt, it is a ceratites, though certainly neither *nodosus*, nor any other described species, it comes nearest to one first described by L. von Buck, from the cretacious bed of Mount Lebanon, under the name of Syriacus, etc."

From a decision by such an authority there is no appeal, and the fact is established: *the fossiliferous strata of Alabama contains ceratites.* The annexed engraving exhibits two of the new fossils, accurately drawn by a skillful designer, in their natural size. The one is open in the middle, a part of the rock in which it is petrified, and most probably, also, of the extremity of the fossil being fallen out by rolling in the bottom of the river. The other is entire and contains a part of the rock in which it has been preserved for many millions of years, most probably.



The denticulations are still visible, although the fossils are somewhat waterworn.—I am yet uncertain whether the too specimens belong to one or different species. There is a material difference among them which I am scarcely willing to attribute to different positions in which the fossils have been, or to a difference of age, or to the influence of the water in which they may have been moved from one place to another and worn off.

As soon as I was certain that my fossil cephalopodus mollusca, were what I believed them to be, ceratites, I lost no time in visiting the locality where they were found, in order to ascertain from what geological formation they originated, as the ceratites, similar to the Ammonites, to which family they evidently belong, are not characteristic to *one single* geological formation, but extend, as far as it now ascertained, from the triassic or new red sandstone group, upwards to the cretaceous rocks through the whole of the secondary, or merozoic period, provided, we exclude the carboniferous formation from it and place it at the upper termination of the primary, or palæozoic period: for we will remember that *the ceratites syriacus* was found by L. von Buck in the cretaceous rocks of Mount Lebanon, and the *ceratites nodosus*, the first discovered species, first described by De Haan, is a fossil characteristic to the Keuper of Germany, a member of the triassic, or new red sandstone group.

The Black-Warrior river, runs where the ceratites have been found, exactly from North to South for about 500 yards. The highest part of the bluff of this portion of the river, from low water mark, has been measured, and found 103 feet high. From low water-mark, for 15 feet upwards, it consists of a stratum of green-sand, which goes down into the water. On the top of this stratum of green-sand lies a seam of coarse and hard argillaceous and calcareous sandstone, abounding in cretaceous fossils, especially gryphæ convexæ, about 9 inches thick. Above this sandstone lies another stratum of green-sand varying in thickness from about 12 to 20 feet. Over this stratum of green-sand lies another stratum of coarse and hard calcareo argillaceous sandstone, the principal depository of the cretaceous fossils, fully 20 feet thick Then follows in an ascending line a stratum of blue laminated clay, or gault, from 10 to 30 feet thick, this gault is in some places overlaid by the white argillaceous marl, commonly called rotten limestone, upon which rests a red sand, intermixed with pebbles, in other places this sand lies immediately upon the gault.

The sand bank on which the three ceratites in my possession have been found is situated under that bluff; it occupies the area of perhaps a little more than half an acre, and is completely covered with quarzose and slaty

pebbles among which are found numerous fish-teeth of the genera ptychodus, oxyrhina, lamna, otodus, corax etc., and other of the smaller cretaceous fossils.

The river has cut its bed to a very considerable depth into the lower green-sand, deeper than I have seen it anywhere else The high bluff exhibits everywhere the fossils characteristic to the different strata of the cretaceous rocks, but the ceratites are nowhere to be found among them, as repeated visits to Erie, and the most careful researches, made at different times, have evinced; nor are any more to be found on the sand bank, which I also have visited and carefully searched, during several hours, at different times, and at different hights of the water. Not satisfied with researches for the interesting fossil in Erie, I have extended them to many other places where the upper or lower strata of the cretaceous rocks crop out, but hitherto with no success at all.

The entire absence of this fossil cephalopod in the upper cretaceous rocks, and certainly, also, in the upper part of the lower cretaceous strata, as far as they can be examined here in Alabama, the place where the ceratites have been found, and lastly their scarcety, justify, in my opinion the conclusion; *that they are either entirely, or principally at least, a fossil of the geological system underlying the cretaceous formation of Alabama*, and, if at all, extend only sparingly in the lower cretaceous rocks.—The question arises here, therefore:—

"*What geological formation underlies the cretaceous system of Alabama?*

This can by no means be the carboniferous formation The lower cretaceous rocks reach farther north than the upper cretaceous strata. The latter terminate, according to my examination, perhaps a little more than a mile farther south; but even from the last outcrop of the lower cretaceous rocks—which falls in a line drawn from Finch's ferry on the Black-Warrior river, 3 mile east of Eutaw, westward to Vienna on the Tombigby river, and eastward to Marion, in Perry county—to the first outcrop of the carboniferous system, in Tuscaloosa and Bibb counties, of North Alabama, there is at least an average interval of thirty miles of an extremely hilly and broken country. This interval is partly occupied by a red sandy soil, full of round and smooth quarzore pebbles, partly by a remarkably variagated clay, with angular yellow argillaceous pebbles, both of which belong, evidently, neither to the cretaceous nor to the carboniferous formations, nor is the principal part of it a merely overlying and drifted foreign material, as is sufficiently indicated by its great diversity; but besides it seems to me to overlap on the north side, the carboniferous system, and it certainly passes under the cretaceous system on the south side, as it is clearly visible along the bluff at Finch's ferry. These intermediate rocks belong, therefore, without any doubt to the lower part of the secondary or mesozoic period, but are most difficut to determine on account of the apparent absence of any other organic remains but petrified wood, and seem by no means to be a well developed system, whatever they may be.

If this intermediate interval of about thirty miles, and perhaps more, occupied by the carboniferous system, passing immediately under the cretaceous formation, and being only concealed by an overlying drifted material or perhaps some detritus, it must necessarily appear somewhere among the considerable hills, for its cover could hardly be considerable enough to conceal it entirely, especially along the Black-Warrior, Tombigby and Cahawba rivers, which have cut their beds, in many places, deeply down through the different strata; but such is not the case.

If even these reasons seem conclusive enough to admit the presence of another geological system, intermediate between the cretacious and carboniferous rocks, there is another one which is not less satisfactory.

Nearly on every plantation in the prairies between the Black-Warrior and Tombigby rivers, there are one, or more Artesian wells board through the postpliacene prairie soil into the cretaceous rocks, which at a depth of from 200 to 600, or 700 feet, give an abundance of water, sufficiently impregnated with chloride of sodium, or common salt, to render it brackish. This salt must necessarily originate from a soliferous, or saltbearing geological system. The cretaceous system is not saliferous. I know the most remarkable saline deposits of Wieliczka, in Poland, have been found in the upper secondary, or cretaceous system, but only as a single exception not derogatory to a general rule On this continent, that system has never yet exhibited traces of salt. The brines from which all the salt of the United States are obtained, come from below the carboniferous system The carboniferous system is saliferous, but only in its lower members. If, therefore, we estimate the thickness of the cretaceous system only to 1000 feet, and that of the carboniferous formation to 3000, indeed the very lowest thickness which we can attribute to them, how can then, an Artesian well, bored to a depth of from 200 to 600, or 700 feet into the former system, receive their chloride of sodium from the lowest members of the latter system? Indeed it is impossible to admit that water impregnated with chloride of sodium could penetrate the carboniferous limestone, the millstone grit and the coal-measures, all solid strata of carboniferous system, and mix at least 3000 feet upwards with the water contained among the cretaceous rocks, especially if we remember that this carboniferous system disappears already from the surface at a distance of from 30 to 60 miles from those Artesian wells and must have a very considerable dip not to reappear again in a broken and hilly country, nor even in the beds of three considerable rivers. In order to receive their salt from that carboniferous system, those saline wells must not only be bored entirely through the cretaceous rocks, but also through the coal-measure, the millstone grit

and the carboniferous limestone and be at least 3000 feet deep, but, nevertheless one of the wells at Finch's ferry, the one nearest to the Black-Warrior river, and a little beyond the termination of the cretaceous rocks, is strongly impregnated with salt, having only a depth of 180 feet. The salt of these wells must therefore originate from a saliferous formation, intermediate between the carboniferous and cretaceous systems, *which contains chloride of sodium in its upper stratum.*

If these circumstances must remove all doubt that the carboniferous system does not immediately underly here in Alabama the cretaceous formation, and prove that there *must be*, an intermediate group, it will not be uninteresting, and throw even some light on the geology of Alabama, if we endeavor to ascertain which of the geological systems, ranging between the carboniferous and cretaceous, it most probably is.

The mesozoic fossiliferous formations found intermediate between the carboniferous and cretaceous, are, in an ascending line—the permian, triassic, liassic and oolitic. All of these groups are sometimes found saliferous, and although the permian and triassic, or new red sandstone group, are the most saliferous, and by preference called the *saltbearing groups*, this circumstance alone would scarcely give any one of them the preference, if it were not that the latter are *especially saliferous in heir upper members*, and that the liassic and oolitic groups, very frequently comprehended under the common name of the *oolitic system*, have never yet been with certainty recognised in the United States, and their territories, and seem not to exist there. This system is besides distinguished by a large number of characteristic fossil remains, and would very easily be recognised did t exist anywhere here. We can, therefore, exclude it with confidence and limit our researches to the permian and triassic groups.

These two geological formations have two distinguishing characteristics in common:

1. Some of the most characteristic strata consist of an exceedingly variegated kind of clay, of a blue, green, red and yelow colour.

2. Some of their strata are sometimes found remarkably devoid of all fossil remains.

These circumstances render it, therefore, often very difficult, if not impossible, to distinguish these two formations from each other, and in this case, both of them have received the collective name of the *poikilitic, or variegated group.*

The superficial strata between the termination of the cretaceous, and the beginning of the carboniferous formations, bear, in some places, such a striking resemblance to the clay of that poikilitic group, that seeing on a journey from Eutaw to Tuscaloosa, on some of the hills in places not more than fifty yards in diameter, as it were, a pattern cast of clay of four, or five different colors (very appropriately called "*Marnes irisees*" in French geology,) I did scarcely hesitate to pronounce these strata, without any additional reasons, to belong, most probably, to the triassic, or rather poikilitic group.

I have since been fully confirmed in this opinion:

1. By the absence of fossil organic remains in those rocks. Nothing but fossil wood has hitherto been found in them and even this seems to be rather of rare occurrence.

2. By this circumstance that these strata are very evidently not only an overlying and drifted foreign material, but a real geological formation, as it is clearly indicated, firstly, by the diversity of soil. A part consits of sandy loam with round water-worn quarzose pebbles This part I am willing to believe to be a drifted foreign and simply overlying material, similar to the drifted material overlying the prairie soil, (more particularly mentioned in my "Essay on the Prairie Soil Alabama," contained in the October number of this journal.) Another more considerable portion consists of the variegated clay, (*Marnes irisees,*) with less water-worn and therefore earlier deposited, angular, oker-colored, argillaceous pebbles.

That these strata are a real geological formation is, secondly indicated by their passing under the cretaceous system, as is clearly visible at Finch's ferry.

3. By the fact, ascertained by a qualitative chemical analysis of a portion of the red loamy sand from a stratum which passes at Finch's ferry under the lower cretaceous rocks, that the rocks intermediate between the carboniferous and cretaceous formations contain a large quantity of magnesia and very little lime, a circumstance charasteristic to the poikilitic group.

4. By the consideration that the poikilitic group is not only the saliferous group by preference, and contains more and more frequently salt than any other group, but especially that the salt is principally found in the upper stratum of this group, which consists principally of saliferous shales (Keuper in German and Marnes irisees in French geology.) Hence it is not difficult to explain how the water of the Artesian wells, bored into the cretaceous rock, only to a depth of from 200 to 700 feet can be impregnated with chloride of sodium, and why one of the Artesian wells of the three at Finch's ferry, bored nearly on the line where the cretaceous rocks terminate and the poikilitic begin, is strongly impregnated with salt, although only 180 feet deep.

It might here perhaps be objected that the existence of the poikilitic group under the cretaceous formation does not account for the presence of the chloride of sodium in Artesian wells only bored *into*, not entirely *through*, the cretaceous rocks, and that, therefore, this impregnation with salt cannot be considered conclusive for the existence of the poikilitic group between the carboniferous and cretaceous formations. But if we bear only in mind that the poikilitic group is most saliferous in its upper stratum, we will easily conceive that such an objection is unfounded.

There are two different ways how an underlying saliferous group can communicate its salt to an overlying one, provided the underlying group be saltbering in its upper stratum:

1. This can be done in the very act of the formation of the overlying stratum.

Before the formation of the cretaceous system, the underlaying group—the poikilitic—constituted the surface of that part of our globe here concerned. The cretaceous system, unquestionably formed in a deep sea, supposes, of course, a previous depression of that surface far below the surface of the ocean. The water of the ocean rushed then in and dissolved a portion of the salt of the underlying saliferous strata, communicating it to the immediately afterwards formed cretaceous sediment and mixing another portion mechanicaly with it. The lower stratum of the cretaceous system overlying a saliferous stratum of another formation can in this way contain chloride of sodium orignally not belonging to it, and if that stratum of the cretaceous rocks is easily permeable to water—as it really is the case with the green-sand which constitutes that lower stratum, the salt can be carried higher upwards until it meets a stratum impermeable to water—the hard calcareo argillaceous sandstone cropping out at Choctaw Bluff, Erie and other places, and containing principally gryphæ convexæ.

2. It can be done when both the underlying and overlying groups have been formed by a communication of the absorbed fresh water from one stratum and from one group to the other, provided the two strata of the different groups, in contact with each other, are both permeable to water, which in this instance is really the case. The salt of the underlying stratum can in this manner, also, be carried upwards so high until it meets a stratum impermeable to water.

In both cases the water of Artesian wells bored only through the hard calcareo argillaceous sandstone, which forms here the last cretaceous stratum impermeable to water can be impregnated with chloride of sodium belonging originally to the underlying group, even if they do not entirely penetrate the cretaceous rocks, but in both cases this impregnation can only be a moderate one, as it is exactly the case with the water of all the saline Artesian wells in the prairies. None of them is so strongly impregnated to deserve the name of brine, and that salt could be manufactured from the water.—The Artesian well which after an analysis of a good many of them, and an examination of still more, seemed to me to possess the most saline water, is one on the plantation of Mrs. Joseph Pickens, about four miles south east of Eutaw. A gallon of the water of this well contains only 210.76 grains of chloride of sodium, not half an ounce.

Such Artesian wells can then only contain water impregnated with chloride of sodium, if they reach down through the last stratum of the cretaceous formation impermeable to water. This again can only be the case in such places where the cretaceous rocks are not too thick, and here we find the reason why the water of a part of the Artesian wells, bored in the cretaceous system, is only impregnated with chloride of sodium.

We have seen that the impregnation of the water of the Artesian wells with salt, can be accounted for, if we admit the existence of a geological group saliferous in its upper stratum intermediate between the carboniferous and cretaceous systems, but it is perfectly unaccountable and contrary to all experience, if the carboniferous group should immediately underly the cretaceous system; we are aware, the latter system is not saliferous in its upper members, at least in the millstone-grit and the coal-measures, and these are besides both so perfectly impermeable to water, to exclude all communication by this medium from below entirely. This reason may, therefore, be considered as a very conclusive one.

5. The discovery of a new species of the cephalopodus mollusca ceratites, which, as it has been shown above, does, either not at all belong to the fossil remains of the cretaceous system, and is in this case washed out of the immediately underlying stratum of the lower geological group, or extends only sparingly into the lower part of the lowest stratum of the cretaceous rocks. In this case it is nevertheless principally a fossil of the underlying group. In either case it removes finally all doubt about the question, which of the lower groups of the mesozoic age underlies, here in Alabama, the upper secondary, or cretaceous system?

The genus of the fossil cephalopods ceratites has never been found lower downwards than in the triassic or new red sandstone group, and even in this group it has only been found in the Keuper of Germany, or in the upper trias, the highest stratum of the system. This fossil has never been found as low down as the carboniferous group, which, according to some geologists, constitutes the upper palæozoic system, according to others, the lowest mesozoic group. It is improbable that it should belong to this group, otherwise it must have already been found in it, for the carboniferous system, probably the most useful of the fossiliferous groups for mankind, has been more carefully explored and extensively penetrated than any other. The finding of ceratites under circumstances which must lead to the conclusion that it is either entirely, or principally, a fossil of the geological group underlying the cretaceous rocks here in Alabama, is, therefore, a certain indication that the carboniferous group does not immediately underly the cretaceous. If this is not the case, the intermediate group between coal and green-sand can according to the reasons above enumerated, only be the poikilitic; and this assertion is, also, evidently confirmed by the discovery of the ceratites at Erie, it being already known that the same group in Europe, contains ceratites nodosus in its highest stratum, the Keuper. The new

species of ceratites, found at Erie, is most probably, also, a fossil of the highest stratum of the poikilitic group, and therefore, easily washed out on an elevation of that group, corresponding with some deep place of the Black-Warrior river, and carried by the current, on a sand bank among the pebbles.

A consideration of all those reasons together, will scarcely leave any doubt about the succession of the poikilitic group after the cretaceous system, and I am persuaded, if our legislature, now in session, should duly appreciate the necessity of a geological survey of this State, so blessed with mineral wealth of all description, and make sufficient appropriations for it, the skillful geologist to the State, would, after a careful examination, soon confirm the above opinion here humbly submitted to his practical judgment.

Eutaw, November 3d, 1853.

Plantation Economy.

[FOR THE AMERICAN COTTON PLANTER.]

No. 11.

Dr. Cloud—*Dear Sir*—I have known many in the rich planting portion of Mississippi, especially, and others elsewhere, who acting on the policy of the boy in the fable, who "killed the goose for the golden egg," accumulated property, yet among those who have relied solely on their product in land and negroes, I doubt if this be the true policy of plantation economy. With the former every thing has to bend, give way to large crops of cotton, land has to be cultivated wet or dry, negroes to work cold or hot. Large crops planted, and they must be cultivated, or done so after a manner. When disease comes about, as for instance cholera, pneumonia, flux, and other violent diseases, these are more subject, it seemeth to me, than others, or even if not, there is less vitality to work on, and therefore in like situations and similar in severity, they must sink with more certainty; or even should the animal economy rally under all these trials, the neglect consequent upon this "cut and cover" policy must result in greater mortality. Another objection, not one fourth of the children born are raised, and perhaps not over two thirds are born on the place, which under a different policy might be expected. And this is not all, hands and teams and land must wear out sooner; admitting this to be only one year sooner in twenty years, or that lands and negroes are less productive at 40 than at 42, we see a heavy loss. Is this not so? I am told of negroes not over 35 to 45, who look older than others at 45 to 55. I know a man now, not short of 60, who might readily be taken for 45, another on the same place full 50, (for I have known both for 28 years, and the last one for 32 years,) who could be sold for 35, and these negroes are very leniently dealt with; others, many others, I know and have known 25 to 30 years, of whom I can speak of as above. As to rearing children, I can point to equally as strong cases; aye, men who are "as it were," of one family, differing as much as 4 and 8 bales in cropping, and equally as much in raising young negroes. The one scarcely paying expenses by his crop, yet in the past 25 years raising over 75 to 100 negroes, the other buying more than raised, and yet not as many as the first.

I regard the "just medium" to be the correct point. Labor is conducive to health; a healthy woman will rear most children. I favor good and fair work, yet not overworked so as to tax the animal economy that the mother cannot rear healthy children, nor should the father be over wrought, that his vital powers be at all infringed upon.

If the policy be adopted, to make an improvement in land visible, to raise the greatest number of healthy children, to make an abundance of provision, to rear a portion at least of work horses, rely on it we will soon find by our tax list that our country is improving.

A tax list with 1000 acres at $3 to $5 per acre, with 75 negroes, will not tell for the wealth of our country as would 1000 acres at $10 to $20 with 50 negroes and an increase—"home born," increase of 5 to 7 per year. I am sick and tired and worried with this overseer quality of policy. I mean to offend no man, a faithful overseer I love as devotedly as any other faithful man. Though my father was born in the Old Dominion, and my mother in Maryland, yet they were residents of my own, my native State—may the Lord smile upon it—when too young to know of the double *F* feeling. I claim to be of very humble parentage, yet the privilege of ever expressing my convictions, on religion, morals, politics, or agriculture, without fear favor or affection.

An overseer comes to me, seeking a situation, his highest recommendation is 10 or 12 bales per hand.—Every thing must yield to this. If a planter desires even a patch of pinders, for his "winter evenings entertainment," there is 10 chances to one, but his overseer is too pushed to clear them out. If he wants melons for himself, or friends, the overseer will plant and cultivate, but urgent matters prevent a little time to be spared in bringing them to the house. The overseer can *ride* by the patch any time, and feast himself. Overseers have become so very l-e-a-r-g-e, that they dictate terms to the owner. I have heard an overseer say, he "would oversee for no man who would not give up the control of his hands." A pretty spot of work this. Am I to give up the management of my own affairs to any man, that he may make a character? Brethren of the South, we must change our policy. Overseers are not interested in raising children, or meat, in improving land, or improving productive qualities of seed, or animals. Many of them do not care whether property has depreciated or improved, so they have made a crop to boast of.

As to myself, I care not who has credit of making crops at Log Hall, and I would prefer that an overseer, who has been one of my family for a year or two, or more, should be benefitted; but this thing is to be known and well understood. I plant such fields in such crops as I see fit; I plant acres in corn, cotton, oats, potatoes &c., as I select, and the general policy of rest, cultivation, &c., must be preserved which I lay down. A self willed overseer may fraudulently change somewhat in the latter, by not carrying out orders,—that I cannot help. What I have written, I have written, and think I can substantiate. Yours truly.

M. W. P.

[FOR THE AMERICAN COTTON PLANTER.]

Hill-Side Ditching.

NO. III.

Dr. Cloud—*Dear Sir*—I shall close, with this article, my communication upon the subject of Hill-side Ditching, &c., by giving, according to previous promise, the *modus operandi* of the same. I shall not, however, attempt to be very minute. This would be supererogatory. The *Southern Cultivator*, and other agricultural papers, have published occasional articles upon this subject, containg such full and satisfactory directions about making the level, laying off the ditches, plowing and scraping them out, running the guide rows, &c., &c., that when one has determined to perform the work and satisfied himself as to the proper grade of the ditches and inclination of the rows, by refering to these articles he will find almost all the directions necessary to accomplish it. I will, however, give a brief outline of my way of doing it, and if it is in any respect better than others that have been given, my agricultural brethren can profit by it. But it might be well to remark, that after reading all the directions that can be given upon paper, the performer will sometimes find himself at a loss in which he will have to rely upon his skill and judgment.

I use the rafter level, similar to the one described in the February number of the *Cotton Planter;* except, that I saw off the rafters just above the cross-piece, to which is attached the spirit level, and instead of having the spirit level in a box, I attach it to the cross-piece by a screw at each end. one of them so arranged as to allow it to move up and down, by which means I can adjust the instrument to any grade, from a perfect horizontal to 3 or 4 inches fall. My level spans 12 feet.

The means of using the level is quite simple. Having adjusted it to the proper grade, place one foot at the point of beginning, move the other foot up or down the hill as may be necessary, until the air bubble in the spirit level settles in the middle of the tube, let a hand with a hoe chop at the feet to mark the places, then place the hind end where the fore end was and chop again, and so on until you have finished the ditch or row. Care should be taken, in running across cotton or corn rows, that both feet rest either in the alleys or on the ridges of the same height, otherwise you will not give the proper grade.

Having cleared the way, by determining the proper fall of the ditches and inclinations of the rows, and learning the use of the instrument, the first and most important thing to be done is laying off the ditches. And according to my experience, locating them properly is the most important part of the whole operation. Accordingly, I would say to the performer, don't be in too much of a hurry about this. Your rows you may easily change every year, but after the ditches have been made a year or two they are not so easy to alter. Consider first where your ditch shall empty. This sometimes requires a good deal of judgment. When there is a branch, creek, or large hollow running entirely through the field, or the full length close along by the side of it, it is easy to see that the ditches should run parallel with it, but when there are little knobs rising up in the field like so many potato hills, to circle them with ditches and find a convenient place to empty them, is sometimes a difficult task. The proper place to commence laying off the ditches is on either side of the lowest place in he field, whether creek, hollow, or branch, run up until you come to the opposite side of the field, or to the top of the hill, where you can get no more fall, there he ditch should head. Then 50 or 75 yards above the place where you begun, the distance varying according to circumstances mentioned in my former article, commence another and do likewise, thus continuing until the whole hill side has been ditched. In laying off a ditch you may have a particular place where you wish it to head, here then you might vary from the general rule by commencing at the head and running down. Sometimes there is a point where you may wish to empty a ditch and a point where you wish the same ditch to head, but in running it out it does not hit both points, here run one from each point and take the one you like the best; on the whole, split the difference by laying off one midway between them. Again there may be a point in the middle of the field at which you would have a ditch to pass; here then, you might commence and run out each way. These and similar things will naturally suggest themselves to the mind of the performer in the practice; nay, and a good many more, which it would be impossible for me now to anticipate, or too tedious to mention. But let me say, here, never venture to plow out a ditch until you have it as nearly right as possible, so that the average distance from it to the hollow or ditch below be about such as the slope of the hill, &c., may require.

When you have laied off and properly located a ditch, let a hand run a light furrow passing through every chop of the hoe, then let him turn back and cut off all the little zigzag crooks, leaving some one side and some on the other, so that it may have gentle curves instead of abrupt crooks. Care, however, must be observed not to

straighten too much, for then in some places there would be too much fall and in others not enough. The ditch may then be plowed and scraped out as the operator may find the easiest and most practicable.

After making the ditches, all that remains to be done is to lay off the rows. This is comparatively easy,—Lay off guide rows from 20 to 40 yards apart, according to the surface of the ground, then lay off from these until you fill the spaces between them, which for the sake of convenience we will call lands. You may commence to lay off guide rows any where almost, either along the fence or lower side of a ditch. Some commence at one side of the field and run across the ditches to the other. This does not work well for me. It may for others. I find it impossible to keep careless plow hands from occasionally plowing down the banks on the lower side of the ditch. And no hand can keep from dropping dirt into the ditch in lifting the plow over it.—Experience will show, that to turn, in plowing, at the ditches, is the best.

As my plan is to drain the rows into, and turn at the ditches, I shall direct accordingly. Commence at the mouth of a ditch on the lower side run a guide row with the inclination desired until you reach the bottom, or the ditch below, as the case may be. Then if there be suden changes in the slope of the hill side, or little knobs, or inequalities, lay off another, not more than 15 or 20 yards distant; but should this not be the case you may make the guide rows 30 or 40 yards apart. Continue thus until you have laied all the area between the places of beginning and ending the rows. Begin at another ditch and do likewise till the field is layed off in guide rows.

In order to fill up the lands, run a row on each side of it alternately until they meet in the middle. Fill up the remainder with short rows. Should the land be wider at the lower end, then every row will drain into the ditch, but should the land be wider at the upper end then the short rows will all drain to one point, and the water come down one row into the ditch. To avoid this, when the land bacomes narrow enough at the lower end for about four rows, let it be divided from one side to the other in the middle, then let these halves be divided again, and then fill up between these four rows with short rows. By this means the water will be brought by four rows into the ditch, instead of one.

These being all the directions which occur to me now as necessary to be given, I have completed my task. If what I have written will add any thing to the agricultural interests of the country, or be any advantage to any one desirous of taking care of his land, I shall be amply paid for my labor. If not, I only hope that some one may take up the subject, who is able to do it justice, and awaken in the farming community an interest commensurate with its importance.

J. F. SMITH.

BENTON Ala., Nov. 9th, 1858.

[FOR THE AMERICAN COTTON PLANTER.]

Productive Industry.

DR. CLOUD—*Dear Sir*—We have read the article published in your October number, on the subject of the "Basket Willow," with considerable interest. How much evidence is yet wanting to convince the South of the extent of her resources, or her undeveloped "Productive Industry!"—"Four to five millions of dollars worth of basket willow annually imported into this country from the old world, at a cost of $100 to $130 per ton," and yet not enough to supply the demand. Five millions of dollars worth of willow to be manufactured into baskets at the *North*, of which the enormous amount of $3,000,000 is sold to the South—sold in a country where willows of every variety would grow without any trouble, upon swampy places fit for little else—where willows now grow in wild luxuriance, capable of being wrought into beautiful baskets.

We know a country woman of ours, a farmer's wife, who takes care of her own domestic matters, with five children to manage too, who has, duriug the last season, sold above $200 worth of baskets, manufactured during her leisure hours, out of the common swamp willow. Her eldest daughter, (11 years old,) has made over $25 worth, being her first effort. Ten years ago, this ingenious woman, upon examining a willow basket, conceived the idea that she could make one. Her first summer's work, only netted her about $9. The aggregate of the ten years exceeds $1000. All this too, has been done without neglecting household duties, and with no assistance save the cutting of willows by her husband in the spring.

How many women, sir, in the country are knitting stockings and finding the wool, at 25 cents per pair? How many finding the raw material, and spinning copperas homespun, at 12½ cents a yard? A woman must knit 800 pairs of stockings, or spin and weave 1600 yards of copperas cloth, to equal Mrs. White's summer basket work.—And the beauty of it is that you are making something out of nothing. You are converting a pest into a blessing—a clump of unsightly swamp willows into beautiful ornamental baskets, for all sorts of purposes. What does woman's work count? What is the amount of productive wealth she adds to the general stock at the South?

Is there any sensible reason for its being always locked up in copperas cloth and stockings? Would not the 2,000,000, or $3,000,000 of willow baskets, if made at home, be a snug little sum saved for comforts? What are we thinking about? Our straw hats are braided for us at the North—our baskets made for us—our clothes nearly all made for us at the North, and yet our women are delving away, knitting stockings, and weaving copperas cloth, at a shilling a yard! Mr. Editor, can't you rouse the women—as to the men of the South, the case is hopeless, we might as well preach to the town pump. OSIER.

[FOR THE AMERICAN COTTON PLANTER.]

Book Farming.

DR. CLOUD—*Dear Sir*—I remember there lived near my farther a gentleman of a powerful intellect, and a very able jurist too, by the by, yet when he left his trade he was a mere tyro.—Whilst on one of his circuits, he stopped all the night with an old acquaintance—not very far from where you was raised in the District East—and there he became fascinated with a new breed of hogs, "the curled tailed hog," and after much talk, Col. S. proposed presenting Judge G., with a pair—and as cordially accepted. They were "cooped with food for their passage," and taken in the carriage—in those days some judges travelled in their cariages and two—and arrived safe at home. In a few months the blood began to show—curl tail, from a cross of the corn crib—corn cribs not being plenty there about, their tails hung like dipped candles. He never could see the cause.

I am led to think of the judge, and many of his peculiarities from reading an article in your August Number, page 248, 249, on "Profits of Fruit Culture." An acre of cotton is charged $24,50 expenses. Now I can certainly cultivate 10 acres per hand—I would like to get $24,50 per hand. Breaking up with double team $2 per acre—I think I can break up with a good team of horses 1½ acres per day, which will be 50 cents for each horse and $2 for the driver. I believe I would like to do this business. Planting and seed—I can with three hands, three implements and an half hand drop and cover according to "Overseer's" plan, (page 234) 10 acres per day, which will give me one dollar for each hand and his team, a fair business. But the end,—is only of the beginning—8 bushels of Apples per tree, and 50 cents per bushel, or $280 per acre. Why, Sirs, it is as easy to cypher up a portion as did the Milk Gal buy her green gown. These are some days. And all comes of one not sticking to his last, and thereby showing us what Book Farming might be.

But, in earnest, Mr. Editor. Will any body insure us one dollar per tree for the fruit? I expect I will continue to plant cotton, because we cannot glut the market, and because it will always sell and pay its own passage as it goes to hunt a master. Apples isn't that sort of truck. I would advise all men who can spare even 30 feet square, to stick down an apple tree, and to plant out many trees of the apple, pair and peach; yet if you do not live within a very short distance of a certain market, you had better not promise to pay money to be made from fruit. I love good fruit myself, yet I love my friends too well to be after advising them to calculate on eight bushels per tree, and 50 cts. per bushel. Fruit in New York, Philadelphia, Boston, or perhaps, Yazoo City, commands ready sale, and at good prices; but dear Sir, just about here, aye, on both sides of the Saluda, for five miles up and down, you couldn't sell the apples from one acre at 12½ cents per bushel, and peddle them about at that.

SALAS C. BLOCK. P. B.

Postscript, P. B. stands for Plow Boy.

Horticultural.

Orchard and Garden.

HINTS FOR DECEMBER.

ORCHARD.—Continue to plant out trees and cuttings. Give them already set out a good dressing of manure, and dig it well in. Plant out strawberry beds and work over old ones, digging in the leaves, &c., which were used for mulching last summer Scions for grafting may now be cut, and if necessary transmitted any distance by mail by being wrapped in oiled silk. Preserve them until wanted in dry soil. By the latter part of this month grafting may commence.

GARDEN.—Continue to manure and dig the garden plot, so that when the time for spring planting comes, it may find you ready with your "lamps lit, trimmed and burning."

Those rank, highly stimulating manures, may now be safely applied, which would burn up every thing if applied in the spring. Plant onions—better buy seeds and sets—sow beets, early cabbage, turnips, and mustard, radishes, carots, parsnips and lettuce. Hot beds may now be prepared; select a warm place in the garden and make a frame of common boards, as long as you want your bed. In this put six or eight inches of, first, stable manure, or partly decayed cotton seed, and cover this with four inches of good soil. In this may be sown anything which you wish to force, such as cabbage, lettuce and radishes. A common glazed window sash should be placed over this frame.

Miscellaneous.

[FOR THE AMERICAN COTTON PLANTER.]

Agriculture in North Carolina.

DR. CLOUD—*Dear Sir*—I presume I could not do any thing better calculated to stimulate the efforts of the friends of an enlightened and improved system of Agriculture, in Alabama, than to give them an idea of what the *Old North State* is doing for herself, in this way.

And, I will begin by quoting the language of others whose authority has more weight with them than perhaps mine has.

"HURRA FOR BUNCOMBE!"

"The Old North State is 'some,' after all said and done. People call her the tar, pitch and turpentine State. True, she produces all these, and they are useful products, and must be had every where. Those who do not "*raise*" them, have to buy them. Besides these things, she has rich gold, iron, copper and coal mines, and marl and lime beds. In a word, she produces, within herself, the staples of every other State in the Union, (except sugar,) and is the only State that does so.—*N. O. Picayune.*

I can testify to the above by what I saw exhibited at the exhibition of the *First Great State Fair*, held at Raleigh, Oct. 1853; I quote from the *Raleigh Register*, of the 19th Oct. It says,

"Never within our editorial experience, have we chronicled any event with more heartfelt gratification, than that which we now feel, in recording the complete success of the *First North Carolina State Fair!* We say *complete success*; for, whether we take into consideration the immense number and the high respectability of the persons present, the character of the exhibition itself, the demonstrations which met the eye at every gaze, of the available and inexhaustible resources of the State, or the indications of State pride and State patriotism, which every where found vent, it was, in each and every respect, a triumph for North Carolina—a triumph of which all her sons, who have her welfare and reputation at heart, may be proud! We confess that, at no previous time, have we gloried more in the fact that we were a citizen of North Carolina, than when, on the opening of this Fair, we beheld the evidences of a greatness, prosperity and *progress*, that put to shame the empty derision of the witlings who have made her a but for their ridicule. In no State of this Union has an experimental initiatory Fair, been so *successful, or so eminently creditable!* This is the unanimous declaration of those from abroad, who have favored us with their presence. Nearly every section of the State, and every industrial pursuit within its borders, were represented. The East sent its fine staples and its blooded stock; the West its splendid cattle and its rich minerals.—The farmer poured in his agricultural products—the mechanic brought forward splendid specimens of his skill—the native artist exhibited the productions of his pen, or pencil,—and the ladies of the State, never behindhand in any good work or beneficient object, crowned the excellence of the whole, with the multiplied beauties which nature had yielded to their culture, and the varied and tasteful attractions which had sprung from their handicraft.

One thing is certain; the result of this Fair has demonstrated, not only what North Carolina *can do, but what she will do.*

What was an experiment is now a certainty; the success of future efforts is guarantied. A number of our people have been deterred from entering the list upon the present occasion, either from a fear of being defeated in the competition, or from an apprehension that the exhibition would prove a failure. In the case of the first of these, the fresh accessions of State pride they must have received, will hereafter drive such selfish considerations from their minds; with the others no such fears can be indulged for the future."

The address of the Hon. A. W. Venable, (the orator selected by the society for the occasion,) was delivered on the ground, to a very large concourse of ladies and gentlemen, who though, exposed to the wind and sun, listened for over an hour to it, with a great deal of pleasure and instruction. It was a very appropriate and excellent address, and well delivered and frequently applauded. As the orator ascended the rostrum amidst the enlivening notes of the tune of the Old North State, played by *Frank Johnson's brass band, three cheers* for the *Old North State* was given by the people with great enthusiasm; And when the address was concluded *three cheers for the orator* was given, as an evidence of the satisfaction and pleasure the address had afforded. Such enthusiasm I never witnessed before at an *Agricultural Fair*. I was pleased to see it.

The catalogue of the various articles on exhibition, contains 580 numbers, but as they are *lots*, and many *lots* contained several articles, it gives an imperfect idea of all the articles exhibited. The beauty, usefulness and excellence of the articles can only be appreciated by those who saw them.

The native short-horn, Durham, and Devon cattle, 66 in number, were finer than I had supposed ever existed in N. C., and most of them were raised here. Twenty-two head of Devon yearling heifers and one yearling bull, sold for one thousand and thirty dollars; and the owner of them said, he could have sold as many more at the same prices, if he had had them.

The hogs were of the Essex, Chester and other breeds. One was said to have weighed 800 lbs. gross. The Essex and Chester were imported, originally, from Baltimore. The Giant, Georgia Mule, 19½ hands high, and weighing 2200 lbs., attracted much attention. He was exhibited by the owner for 25 cents each person, and much money was taken in at the door. I heard a gentleman say, he would give ten thousand dollars for him, if he could spare the money and time to exhibit him a year or two. He is of black color and well formed, and broke to harness.

Another large mule would have been a curiosity had it not been "laid in the shade" by the Georgia Giant.

A great many high blooded horses were exhibited, among them a Morgan stallion—a fine trotter and buggy horse.

The Poultry department was well represented. The game fowls attracted most attention; a pair of which sold for $36, and 8 pair for $161, a part of which, was presented, as a donation, by the liberal owner, to the society.

The Agricultural Implements and Machinery, much of which was from Baltimore, will compare with the same kinds at the North.

The grain was as fine as I ever saw, at the New York State Fair. The Collins corn and the Poland rye were superior to any I have ever seen. The Poland rye exhibited by Mr. Sidney Weller, is said to produce, on good ground, 60 bushels per acre. The grain is the longest and largest I have ever seen, and I have seen "some rye," in my travels. I should be satisfied with it if my land will bring 20 bushels per acre, 10 more than it will produce of the ordinary kind.

I did not have the pleasure of tasting any of Mr. Weller's Scuppernong Wine, but those who did, pronounced it superior to the *Nectar* the "*Gods drank*," to what Mr. Longworth may say to the contrary.

I do not pretend to be a judge of the beautiful, useful and tasty articles exhibited by the *Fairest* of the Fair, but, I can say, I should have noticed them more particularly, had not so many sweet faces and beautiful orbs attracted my attention more closely, and threw a misty veil over my eyes."

Will not the success of this Fair stimulate the Members of the Alabama State Agricultural Society to hold one at Montgomery, some day? I think it should be done, and with the proper exertion and management on the part of those who take an interest in the advancement of Agriculture, in our State, I am sure such an effort would be crowned with success. Let our motto be, *nil desperandum*, and fail we will not!

Respectfully submitted,

N. T. SORSBY,

Forkland Ala.

P. S. I will endeavor at a future time to give you an outline of the *modus operandi*, by which the improvements in the Agriculture of North Carolina, are being brought about.

A Seasonable Receipe.—*Rendering Lard.* One of the best Housekeepers in the county of Philadelphia, has communicated to us the following receipe for rendering lard, which was obtained from Charleston, and which possesses many important advantages over the common mode. It is simply to put in the kettle before the lard—say *three pints of ley*, made of hickory ashes, to a common barrel kettle, (generally holding less than a barrel.) The advantages of this, are, that the lard renders *easier, becomes much whiter, is sweeter and will keep much longer.* This method has been pursued for several years, with the highest satisfaction.

Will not some of the numerous Housekeepers who read this paper, try it this season, and inform us of the result?—*Ed. Tel.*

To Pickle Onions.—When gathering your onions in the fall, save all the small ones for pickling. Peel them carefully, and soak them in strong brine two or three weeks. This takes out the strong taste and smell. Then take them out of the brine and soak them twenty-four hours in weak vinegar. When taken out from this, insert a clove in the top of each onion, and lay them carefully in a stone jar, and cover with cold vinegar. They will be fit for use in a few days.

Grapes for the South.

THE Subscriber offers for sale about 30 dozen fine, well rooted **Scuppernong Grape Vines**, of two years growth. These Vines have been propagated by layers from a vine direct from Skuppernong river, of superior quality and unrivaled by any vine south of Tar river. These vines are warranted to bear the third year after being put out, and for 99 years in succession thereafter.

They can be had by application to me at La Place, or in the city of Montgomery at $5 per dozen, well put up, and securely sent to any part of the country.

October 1, 1853. DR. CLOUD.

Saxon Merino Bucks.



The subscriber has eight young Buck Lambs, of the above named fine breed of Sheep, and four of the same breed with a dash of the South Down. These Lambs are now four months old, of fine size, good condition and health. Gentlemen wishing to cross this fine variety of Sheep on their flocks, can have these at a small consideration above their market value for mutton. Price $10 each, deliverable at any time after the first day of September. If to be shipped, they will be delivered at Shorter's Depot, on the Montgomery and West Point Rail Road, in a good secure cage for which $1 will be required.

W. B. CLOUD.

Splendid Fowls.

THE attention of POULTRY BREEDERS and FANCIERS OF POULTRY generally is invited to the unrivalled varieties now offered to the public by the subscriber, embracing every species of value in the United States. Especial care has been bestowed to render them all that can be desired by the

Poultry Dealer, Farmer, or Amateur.

Having devoted several years to the rearing of Choice Fowls, the subscriber flatters himself that by his unremitting care and attention those now offered by him have attained a degree of excellence, as regards size, symmetry, plumage, &c., which cannot be surpassed.—The several breeds are warranted ENTIRELY PURE, especial vigilance having been exercised to prevent any admixture of blood. Among these may be enumerated the following:

Brahmah Pootra,	Game Fowls,
Chittagongs,	Silver Pheasants,
Grey Shanghaes,	Seabright Bantams,
Buff do.	English do.
Black do.	White do.
White do.	Nankeen do.
Red do.	Royal Cochin China,
White Cochin China,	Hong Kongs,
Malays,	Great Javas,
Bucks County,	Black Spanish,
White Surrey Dorkings,	Speckled Dorkings,
Black Polands,	Creoles,
White do.	Frizzled Fowls,

Golden Splandid Hamburgs.

☞ Purchasers may buy with the fullest confidence that their orders will receive prompt attention, and that the fowls furnished are pure blooded and in healthy condition.

☞ All fowls purchased will be carefully caged, and delivered in New [illegible] or Albany, or placed on shipboard or railway [illegible] charge, after which the responsibility of the subscriber ceases in reference to their safe arrival at their destination.

☞ Orders and letters of inquiry should be addressed to

J. PLATT, box 128 P. O.,
Dec. 1st, 1853. Rhinebeck, N. Y.

J. A. & S. S. VIRGIN,

MACON, GA., AND MONTGOMERY, ALA.,

DEALERS IN

PIANOS, HARPS, GUITARS, STRINGS,

SHEET MUSIC,

AND A

VARIETY OF MUSICAL MERCHANDISE,

GOLD AND SILVER WATCHES,

JEWELRY, SILVER AND PLATED WARE, AND FANCY ARTICLES.

N. B.—Watches, Clocks, and Jewelry repaired in the best manner.

April 1, 1853-6t

JOB WORK,

OF EVERY DESCRIPTION, NEATLY EXECUTED AT THE OFFICE OF THE

ALABAMA JOURNAL.

Contents of this Number.

Commercial Benefits of Slavery ..... Page 353
Manures 356
Economy of Insects 359
Red Clover at the South 362
Pruning the Scuppernong Grape 363
Ladies on Horseback 364
A Farmer in Alabama 365
Cotswold Sheep 365
The Preservation of Eggs for Winter Use 366
Rail Roads 367
Preserving Fresh Fruits 368
Several Valuable Recipes 368

EDITORIAL NOTICES.

Our First Volume 369
Our Cabinet of Exchanges 370
Peach Trees, Cane, Rotation and Peas 371

SCIENTIFIC.

Preliminary Essay 372

PLANTATION ECONOMY.

Essay No. 11 377
Hill-Side Ditching 378
Productive Industry 386
Book Farming 380

HORTICULTURAL.

Orchard and Garden—Hints for December 380

MISCELLANEOUS.

Agriculture in North Carolina 381

THE SOUTHERN CULTIVATOR, is published on the first of each month, at Augusta, Geo. by D. LEE, M. D., Editor, and D. REDMOND, Assistant Editor. *Terms:* $1 a year, in advance.

SADDLERY.

F. A. ROBBINS & CO.,

CORNER WATER AND ST. MICHAEL STREETS,

MOBILE, ALA.,

DEALERS IN

SADDLERY,

INVITE the attention of *Merchants* and *Planters* to their extensive stock, comprising Saddles, Bridles and Martingales, Harness of every description, Leather of all kinds, Saddlery Hardware; Saddlers', Shoe-Makers' Carriage-Makers' Tools, Materials and Trimmings. Also, a superior article of Patent Stretched and Riveted *LEATHER BANDS*, for Cotton Gins, Mills, and Machinery, of all kinds that require Belts. All of which they offer for sale at *Low Prices*, wholesale and retail.

Mobile, July 1st, 1853-6t

ALABAMA JOURNAL JOB OFFICE PRINT.

Mississippi Nurseries,

LOCATED NEAR YAZOO CITY, MISS.

THE subscribers take great pleasure in announcing to their friends, and the public generally, that they have now on hand, and ready for sale, one of the choicest collections of **Fruit Trees** to be found any where in the South. Their assortment is very large and complete—the trees are healthy and well grown—and the prices as low as can possibly be afforded. The following are some of the leading articles with prices annexed:

Pears $1 each,	$80 per 100.	Apricots	$1 each.
Apples 25c. each,	$20 " "	Nectarines	50c. "
Peaches 25c. "	$20 " "	Plums	$1 "
Strawberries, 50c. per doz.		Cherries	$1 "

All articles sent from the Nurseries are carefully labelled, securely packed, and delivered in Yazoo City free of charge. Orders to receive attention, must be accompanied by cash, or good N. Orleans, Vicksburg or Yazoo City reference, and addressed to the subscribers at Yazoo City, Miss.

N. B. Persons unacquainted with the different varieties of Fruits, would do well to state for what purpose the trees are wanted, and leave the selection to the proprietors.

Sept. 1, 1853-6m C. B. SWASEY & CO.

NO. 1 SUPER-PHOSPHATE OF LIME.

THIS valuable fertiliser has been used for several years in England and other parts of Europe, and next to Guano, holds the highest rank in popularity, and the extent to which it is used among farmers. Its introduction in this country has been more recent; but the progress it has made in the estimation of the public has not been less marked or successful than abroad. It is now entensively used throughout the Northern States, after a full trial and investigation of its merits; and it is rapidly becoming, like its predecessor, Guano, a favorite manure at the South and West.

It is composed of crushed or ground bones, decomposed by the addition of about 1-5 their weight of sulphuric acid, diluted with water, to which is added a due proportion of guano and sulphate of ammonia. The latter is the active and one of the most efficient agents in the best Peruvian Guano.

It is suited to any soil in which there is not already a full supply of the phosphates, which is seldom the case. All crops are benefitted by its application.

For sale in large or small quantities, in bags of 150 lbs. each. No charge for packages. All bags will be branded "C. B. DeBurg, No. 1 Super-Phosphate of Lime."

For sale at R. L. ALLEN'S Agricultural Warehouse and Seed Store, 189 and 191 Water street, New-York.

Sept. 1, 1853-2t

Yellow Clover,

FOR WINTER PASTURAGE.

THE subscriber having grown the Yellow Clover successfully upon his Farm, knows it to be the article represented above, which is just the thing Planters in the South need. The reduced rates at which the Seed are sold, is a sufficient guarantee that no humbug is intended.

These Seed are to be had at the Drug Store of B. R. JONES & CO. The clean Seed are sold at $1 per pint, enough for one acre. In the bur 50c. per peck.

Sept. 1, 1853-tf B. J. SMITH.

CABOT SCIENCE LIBRARY

CANCELLED

MAY 0 9 2002

3 2044 056 238 975

48 7 5304

DATE DUE

AUG 6 1976

SEP 8

STALL STUDY

CHARGE

CABOT

FEB 2 6 2002

BOOK DUE

GAYLORD

PRINTED IN U.S.A.